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RUBBER PLANTATIONS AS CONSERVERS OF HUMAN LIFE.

"EVERY ton of rubber costs a human life" is an adage that has met with general acceptation for many years as referring to the product of the Amazon country. Like most accepted adages, this has commended itself rather by reason of its epigrammatic form than because of its mathematical accuracy. The country of the Amazon produces about 40,000 tons of rubber each year. It is hardly thinkable that each year's product should cost 40,000 lives; that certainly would be an appalling slaughter. But on the other hand, in view of the known conditions of that region, it must be admitted that these figures are in all probability more than half true. It is quite likely that each year's output of rubber from the Amazon costs 20,000 human lives, perhaps more. This extreme mortality is attributable to a variety of reasons—primarily to the climatic conditions, which render it almost impossible for a white man to live in that region; to the swamp fevers; the dreaded *beri-beri;* the wild animals, and still worse the poisonous snakes of the jungles; to the unescapable pests of mosquitoes and other insects; to the extremely unwholesome food and worse drink, the typhoid-producing water; to the feeble preventive measures so far taken and the inadequate remedial agencies hitherto employed. All of these combine to create conditions under which human life is well-nigh impossible.

Over against this compare the conditions that obtain in plantation countries, and especially in those sections where the largest and most prosperous plantations have been started. Here the laborers, or the greater part of them, live under the most sanitary conditions possible in a tropical climate. They are wholesomely fed, and given pure water to drink. They are adequately sheltered; they are protected as far as possible from mosquitoes and other disease-bearing insects; they are kept under expert medical surveillance and given prompt medical attention; with the result that they enjoy better health than laborers engaged in other occupations in the same community. In other words, in a large plantation district, rubber gathering instead of being destructive of life is a preserver of health, and a conserver of life.

If some captious critic should remark that this is not an evidence of humanitarianism but that these sanitary precautions are taken for purely commercial reasons; on the ground that a healthy coolie is more valuable than the same coolie in a continual state of incapacity, this does not alter the situation in the least. It is not necessary to make a nice analysis for the purpose of detecting just what percentage of this fortunate situation is attributable to the working of the planter's heart and how much to the operation of the planter's head. The fact remains that a plantation of rubber is as free from human sacrifice as almost any line of human endeavor.

Conditions in the wild-rubber countries, particularly along the Amazon and in Africa, are improving with each year, and the aphorism that "every ton costs a human life" is becoming a constantly less accurate statement of fact, but necessarily, from the very conditions under which wild rubber is secured, it will never be possible to render them as immune from hazard to health and life as the conditions on the plantation. The constantly increasing proportion of plantation rubber therefore not only makes for the commercial stability of the whole rubber industry, but for its humaneness.

RUBBER TREES IN TIMES OF DROUGHT.

AN exceedingly interesting demonstration has been given during the past season in the West Indies and the Guianas, of the conduct of rubber trees under conditions of severe drought. It cannot be claimed that this has been a free demonstration, for, as a matter of fact, it has been in a general way extremely expensive, but it has afforded much valuable information to rubber planters.

There has been a very severe drought, continuing for many months, throughout all the Southern group of the West Indian Islands, and covering the Northern part of the continent of South America. Some idea of its severity may be gained from the fact that for the first three months of this year the rainfall in British Guiana was less than 2½ inches, as compared with over 20 inches for the same period last year. In the islands the cacao and banana crops have been practically ruined; in fact all vegetation seems to have suffered severely—with the one exception of rubber. The rubber trees in Trinidad and the adjacent islands appear to have gone through the drought in practically their normal condition, giving fully, or at least approximately, the same yield as in former years. In Trinidad, for instance, there are two large trees, planted many years ago, which for some time have produced an annual yield of ten pounds each; they were ready this year, each with its ten pounds of rubber, just as if the rainfall had been frequent and copious.

The exports of balata from British Guiana for the first three months of the year dropped to 23,000 pounds from nearly 73,000 pounds, the production for the same three months last year. This marked shrinkage was not because of the decreased yield of the trees, but almost wholly because the drying up of the rivers —the only means of communication between the balata forests and the export point—had rendered it impossible in many instances, and difficult in all, to send the usual expeditions to the balata camps, or to bring the rubber down to port after it had been secured.

While the meagreness of the rainfall during the last eight months has played havoc with many of the plantation activities in the West Indies and adjacent shores of South America, it certainly has given strong encouragement to rubber planters in that section, for it has proved, that in rubber, they have a tree that will weather, unimpaired in condition and in yield, a season of marked disaster to other planting industries.

THE UNHAPPY SITUATION IN MEXICO.

WHEN the long Diaz regime, which towards its end grew sadly weak and incompetent, came to a close, and Madero succeeded to the presidency of the republic, the hope was entertained that at last Mexico would enjoy immunity, or at least a respite from the internal disturbances that had so long interfered with its prosperity and its good name.

But this hope—which it must be admitted was not unattended by grave misgivings—was not destined to enjoy immediate fulfilment, for conditions have not materially improved under the new administration. In many parts of the republic lawlessness is rampant and the Federal authority treated with open contempt.

This unhappy situation is a matter for profound regret to Americans, not only because of the neighborly amity which we should feel, and which we do feel, towards the countries that touch our borders, but because of the fact that thousands of Americans are personally interested in the commercial welfare of Mexico. Millions of American money have been invested in the southern republic, in every conceivable kind of enterprise—conspicuous among them the industry of producing rubber. For the last fifteen or twenty years Americans have been investing their money in rubber plantations in Mexico, and during the last five or six years the production of guayule has assumed very large proportions. Naturally, in the chaotic condition of that country during the last two years—and particularly during the last few months—all business enterprises have languished, if they have not come utterly to a standstill; and a great many Americans have thought it the better part of discretion to abandon—temporarily at least—their property and their enterprises, and to return to this country for personal safety. We have only an inadequate idea of the condition of panic, not to say of terror, that has obtained in many sections; but enough has reached us to show that foreigners—and particularly Americans —in many parts of Mexico have done wisely to abandon their interests there for the time being. A refugee, who recently reached Galveston, stated that in the little settlement at Sanborn, where there had been a colony of eleven American families, all of them had left because, as he said, "they were afraid to remain longer, knowing that they would all be killed or tortured." There are several notable rubber plantations in the neighborhood of this little abandoned American colony, and rubber planting is subject, of course, to

the same risks and hazards as any other foreign enterprise in that country.

As President Madero owes his fortune and that of his family to the guayule industry, it might be thought that he would look with especial sympathy upon rubber ventures in that country, and probably he does; but as Mexican lawlessness is in no way due to his indisposition to suppress it, but rather to his inability, it is obvious, that whatever fellow-feeling he may have for those engaged in the enterprise in which he is personally interested, he is not in a position to render them any material assistance.

The rubber outlook in Mexico from the standpoint of natural advantages has appeared very bright, and, undoubtedly, some day it will be a noteworthy industry in that republic, but obviously it can hardly be expected that further American investments will be made in any line of rubber production in Mexico under the conditions now prevailing.

AN INTERESTING SITUATION IN THE TIRE TRADE

LAST MONTH developed an interesting, not to say dramatic, situation in the tire trade. During the first week of April there was a very general expectation throughout the trade that tire prices would be immediately advanced. There seemed so much basis for this expectation that dealers were in considerable haste to get in their orders before this advance took place. In the midst of this situation, and evidently without any fore-knowledge on the part of competitors, The B. F. Goodrich Co. made a country-wide announcement in the large city dailies of April 7, that its published list of prices to the consumer would be substantially reduced, the reduction, as a matter of fact, amounting to nearly 17 per cent. As soon as the trade had recovered its breath, there was a general movement, precipitate in some quarters and more deliberate in others, to scale prices down to, or somewhere near, the new level.

This unexpected move in materially reducing prices was explained by its initiators on the ground that the trade had practically ceased to regard seriously the old published list, and that the prices as published were being cut almost universally. It was deemed advisable, and as making for conservatism under these circumstances, to issue a new list of prices, which the dealers would have far less temptation to ignore.

While this downward price movement came unexpectedly to the trade, it could hardly occasion any surprise to the student of economics, as the whole tire situation may be said to have been rather abnormal for some time past. The tremendous demand for tires had made it possible to put the industry on a basis of exceptional profits. This situation naturally invited extensive competition and greatly increased the sources of supply. It is simply the oft-repeated phenomenon of supply overtaking demand, with the natural consequence of a diminution of profits to a point more nearly in harmony with the normal returns in other manufacturing lines.

THOSE AUTO TIRES FROM THE SPINELESS CACTUS.

THE bane of every scientist is the unveracious reporter, who is simply after a "good story," quite regardless of any consideration of facts. A short while ago a great many of the daily papers contained a thrilling recital to the effect that Mr. Luther Burbank, the famous Californian who has achieved such wonders in the plant world, had discovered a certain cactus, from the leaf of which could be made automobile tires, print paper, unlimited paint and other useful commodities. Here is a sample paragraph taken from a most reliable Massachusetts paper:

"MAKE AUTO TIRES OF CACTUS LEAVES.

"Santa Rosa, Cal.—Luther Burbank, addressing the California State Fruit Growers' convention here, made the startling announcement of a wonderful discovery in the further use of his famous spineless cactus. He says it will revolutionize the whitewash, paint and automobile tire industries. Burbank said he had discovered that the fiber of the plant was an excellent substitute for rubber in the manufacture of automobile tires. He added that this same fiber would also be an excellent substitute for wood pulp in the manufacture of paper."

Some accounts went into minute details in describing the reception accorded Mr. Burbank's announcement of his discovery. A leading Maine journal thus portrayed the scene:

"When Mr. Burbank had reached this point in his talk before the congress he had every delegate crowding forward toward the platform taking notes and firing questions at him. But the excitement then was nothing compared to the interest manifest when he announced that after the mucilage had been taken from the cactus leaves for the whitewash and paint the fiber could be converted into print paper and into automobile tires.

"The fiber of the spineless plant is excellent as a substitute for rubber used in the present tires, said the

horticulturist, and he declared his belief that it would make tires far more durable."

We were interested to discover how much truth, if any, there might lie at the bottom of these accounts. Accordingly we wrote Mr. Burbank as follows: "You are reported as having discovered a spineless cactus which would serve as an excellent substitute for rubber in the manufacture of automobile tires. We would be very glad indeed to get any information on this point or any expression of your opinion as to the possibility of such substitution." We immediately received his reply, which we give below:

"TO THE EDITOR OF THE INDIA RUBBER WORLD.

"DEAR SIR: The half crazy reporter of a daily paper is responsible for the misinformation given out as coming from here. In other countries, I judge a newspaper publishing it would be a subject for legal suit, but here it would only end in more blackmail.

"Very little of the matter reported is true. I have never said a word indicating that the cactus produced anything suitable for automobile tires.

"Regretting that insane reporters are allowed to be at large, I remain, Respectfully yours,

"LUTHER BURBANK.

"Santa Rosa, California."

We sympathize heartily with Mr. Burbank in his regret "that insane reporters are allowed to be at large," but until some means can be discovered for curtailing their activities, they will doubtless continue to attribute incredible discoveries to scientists of repute—to the great annoyance of the scientist and to the constant increase of the amount of misinformation that readers of the daily press are called upon to absorb. For the scientist there seems to be no redress; but for the reader there is this redress, that he can absolutely refuse credence to all extraordinary "scientific" offerings in the daily press, until their verification shall reach him through more serious channels.

THIS YEAR'S MALAYAN PROGRESS.

CABLE returns supplementing the figures to March 7, quoted in another column, indicate that the first quarter of the current year shows rubber exports from the Federated Malay States to have been almost double those for the corresponding period of 1911, in the same proportion as those of 1911 exceeded the figures of 1910. The exact quantities as officially stated by the Malay States Information Agency, London, are:

	1910.	1911.	1912.
January ...*pounds*	768,743	1,329,170	2,730,576
February.....	728,458	1,490,849	2,715,767
March.....	899,383	1,916,219	3,089,583
Total.....	2,396,584	4,736,238	8,535,926

THE CALCULATION OF RUBBER GOODS.

IN calculating the selling prices of goods, it is not merely necessary to provide for contingencies which are likely to arise, but also to make allowances for claims which, although not foreseen and perhaps not in themselves justified, it may be politic to allow, in view of future business.

To such claims as these the rubber industry is specially liable; particularly in cases where a certain efficiency is guaranteed, such as the mileage of motor tires. Although a prudent manufacturer will not guarantee more than he knows by experience, his tires will stand, he may be quite innocently confronted by a claim due to overloading or to careless driving, but which he is not in a position to prove was thus caused. Tires frequently suffer by trucks being driven over freshly graveled surfaces, or from other avoidable sources of injury.

Another difficulty is that mileage records are not in all cases reliable. In some instances the mileage is furnished by the chauffeurs. In other cases, where automatic registers are used, those appliances are liable to get out of order through the oscillations and concussions to which they are subjected. Thus a margin for such claims should form a part of any calculation.

Whenever a penalty is stipulated for failure to deliver punctually, a percentage should be included to represent this ever-present risk. Apart from the dangers of fires, strikes or the break-down of machinery, where the work is done in one factory or department, there is the risk of delay from those causes in the receipt of materials from elsewhere. All these points need to be foreseen and provided for.

Nor are manufacturing operations free from unforeseen risks. This is particularly the case with the waste in manufacture; unexpected losses from that source equally applying to hand and machine production.

Each class of rubber goods, whether mechanical or technical articles, tires, clothing, etc., has its special inherent risks.

Rubber goods manufacturers, recognizing the fact that however much in the right they may be, disputes will cloud their reputation, often submit to unjust claims in order to keep on good terms with customers whose recommendation is valued. But, as Herr Alfred Lutz, the German rubber expert, remarks, a manufacturer who acts in a conciliatory spirit under such circumstances, should get better prices than one who adopts a contrary policy. This result can only be attained by making such eventualities factors in the calculation of selling prices.

Glimpses of Rubber Lands.

By the Editor of "The India Rubber World."

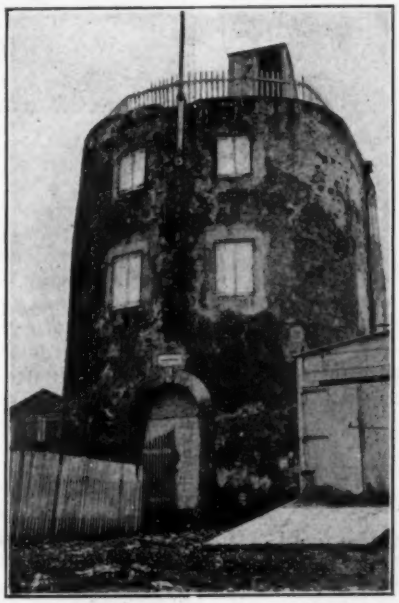
St. Thomas and Its One Famous Product; Bluebeard's Castle.—St. Croix—Sugar, Cocoanuts and Piety; An Ancient Pirate.—Antigua—Beautiful St. John; Flourishing Manihots.—St. Lucia—Castilloas, the Fer-de-Lance.—Dominica—Healthful, Fertile—Heveas, Sapium, Funtumias—Low-Priced Land, Cheap Labor.—Martinique—Mont Pélée; St. Pierre.—Guadeloupe—Healthful and Fertile—La Soufrière—Favorable Conditions for Rubber.—Off to Trinidad.

A VERY pleasant way to visit the real tropics is to go by the way of the Danish, British and French West Indian Islands to Barbados, then on to whatever portion of the Torrid Americas one has in mind. The following brief paragraphs are submitted as a brief guide to those who may have some of these islands in mind as possibly suitable for rubber growing:

ST. THOMAS.

One reason that I stopped at St. Thomas was that it is a port of call on the way to the islands that do something, if not a great deal, in rubber growing. Another, a perhaps more potent one, was that I had received a package of seeds no one was able to identify, but which when macerated contained a percentage of rubber, and they had been posted from St. Thomas.

The water journey had been rough, and when we slipped into the beautifully protected harbor of Charlotte Amalie and dropped anchor in water as calm as a mill pond, the contrast was as pleasing as it was striking. It was just at nightfall and with no breeze, not a ripple on the water, hardly any noise on sea or shore, ordinary conversation on our boat seemed grotesquely loud and one was tempted to whisper. The little town evidently goes to sleep soon after sunset, but it wakes up early in the morning, and it was then that we went ashore. We had an excellent breakfast at the clean little hotel, and then started out to get light on the rubber-containing seeds. It did not take long to discover that wherever they came from, they did not come from that island. The knowledge of its productions is very complete, largely because they are so few. Indeed, the only product of any note is the cheap and world-famous bay rum, and neither the bay nor the rum is a St. Thomas product.



BLUEBEARD'S CASTLE, ST. THOMAS.

Of course we visited Bluebeard's Castle, a half ruined stone tower, set up on the hillside overlooking the bay, a relic of the days of the buccaneers. The hardy old pirate, who was the possessor of seventeen wives, so our dusky guide informed us, was finally captured, put in a barrel lined with bristling knives and rolled down the steep hill into the sea. He was so much cut up by this treatment that he never returned. Our ten-year-old informant with rolling eyes and dramatic gesture, also described a tunnel running from the castle far out under the harbor, its ancient purpose being the blowing up of unsuspecting merchantmen anchored in the bay. We attempted to bribe the boy to show us the tunnel, but his horrified stories of "ghostses' groans an' clankin' chain" frightened us off. Besides no one knew where the mouth of the tunnel was. These dime novel delights were so wearing that we forebore to visit Blackbeard's Castle on the other side of the town, but went timidly to the boat landing and hurried for refuge to the steamer.

There is another interesting feature in St. Thomas, that is, to Americans, which is the fact that Denmark almost unloaded the island upon the United States, and its colored and partly colored population of 13,000 came very near being American citizens. These St. Thomasites, all of whom speak English, and not Danish, deeply resent the slight put upon them by Uncle Sam, and are very apt to accuse every visiting American of being party to it. During my brief visit I apologized to several score indignant citizens and promised at the first opportunity to use my influence to have the decision reversed.

ST. CROIX.

Another nearby Danish possession is Santa Cruz, ordinarily called Saint Croix, an island that is as fertile as St. Thomas is barren. Sugar and cocoanuts are the chief products here, a by-product being the well-known Santa Cruz rum. We landed at Fredericksted and spent some time in doing the neat little town, chatting with all the natives and incidentally attending church, for the "Domine," an Episcopal clergyman on our boat, had been invited to assist at the service. There is no hotel in the town, but there are four churches, and the whole population attends. The audiences are very black and very devout.

HARBOR OF ST. THOMAS (TOWN OF CHARLOTTE AMALIE IN FOREGROUND).

The streets of Fredericksted are very clean, the town thrifty,

and the Danish soldiers in bright blue coats and white trousers art stiffly picturesque. There was anchored in the harbor a schooner, which could it speak would have been able to tell some very thrilling tales. Used today as a freighter between Fredericksted and Christensted it looked very harmless, yet in the olden days it had been pirate, slave-trader and blockade runner. It was 127 years old and still sound, and could outsail anything in those waters.

THE PITONS, ST. LUCIA.

ST. JOHN, ANTIGUA.

St. Croix is one of the most American of the Carribean islands; 40 per cent. of the inhabitants have been in the United States. Many of the great sugar estates are owned by Americans; one company alone possesses between forty and fifty of them. Although Danish is taught in the schools, the people refuse to use it and speak English. They also long to be Americans.

Although it undoubtedly would have flourished there, rubber has not been essayed at St. Croix; that is, I could find no record of rubber planting and doubt if anything has been done along that line. We left Fredericksted at noon, coasting along the green shores of the island and finally turning into the teeth of a stiff easterly wind, headed for Antigua.

LARGE *Castilloa* AT DOMINICA.

Manihot Dichotoma, 3 YEARS OLD, ANTIGUA.

ANTIGUA.

Antigua is really a very important island, and is the residence of the Governor-in-Chief of the Leeward Federal Colony. It has nearly 20,000 acres under cultivation, mostly in sugar-cane. It is very picturesque, partly of coral formation, partly volcanic; and the harbor of St. John, if only an entrance were made through the reef at the mouth, would be magnificent. As it is, the big boats anchor three miles out and passengers and baggage go ashore in a steam launch. The narrow entrance to the harbor is guarded by two ancient forts set high up on picturesque rocks.

The city is exceedingly beautiful with its setting of royal palms, its broad verandad houses and the many dainty bungalows perched on the surrounding hills. The Botanic Gardens and Experiment Station were among the first places visited. Of the rubber trees growing there, *Castilloa Elastica*, although four years old, was only about three feet high, and gave no promise of doing better. This was perhaps due to the abundant West Indian scale upon it. Of *Heveas*, none of those planted were left, all having died as soon as planted. The few *Funtumias* has reached the height of about twenty feet, but they were poor specimens, and would never amount to much. The *Manihot Glaziovii* were strong and healthy and gave evidence of having found a climate that suited them. The *Manihot Dichotoma* had just been introduced some eight months before, the seed being obtained from Ceylon. Those grown from seed were four to five feet high, while numbers grown from slips taken from these plants averaged two feet.

We were fortunate in meeting Mr. Jackson, curator of the Gardens, who gave us much information regarding rubber experiments, successful and unsuccessful. He seemed to believe that so far the *Dichotoma* showed the most promise, and that there was the possibility that some day Antigua might do something with it on a commercial scale. Certainly with a rainfall of from thirty to fifty inches and often times a prolonged drought no other of the rubber producers were to be seriously considered.

AT THE EXPERIMENT STATION, ANTIGUA.

St. John is very healthful, has fine stores, a good hotel, is well governed, excellently policed and one of the pleasantest towns in the West India Islands.

ST. LUCIA.

When you enter the beautiful harbor of St. Lucia, by the big empty fort that guards the entrance, and tie up at the pier, be sure that it is raining, or else get ashore at once and far from the pier, for it is here the steamers take on coal, the work being done by hundreds of husky blacks of both sexes, and the soft coal dust is very penetrating.

St. Lucia has the best natural equipment of any of the islands for rubber manufacture. It has a plantation of *Castilloas*, a mountain of fine chalky earth and a great deposit of sulphur. Apparently all that would be needed is a factory and an expert compounder. To be sure, the rubber plantation is not yet mature enough to produce, but that is only a detail. Sulphur is being worked by a New York company, the head of which is an American, who once was manager for Joseph Jefferson. I became very well acquainted with him and his stories of life upon the island, native idiosyncrasies, and of that poisonous and dreaded serpent, the Fer-de-Lance, were most interesting. He was possessed of a gentle humor and a manner that really was suggestive of Jefferson himself, and the fact that he had forsaken the land of the footlights and was happy in his quiet tropical enterprise was in itself an instance of the adaptability of the modern Anglo-Saxon.

CASTRIES, ST. LUCIA.

Castries, the port at which we landed, is unusually level for a West Indian city, has broad streets and a prosperous look. It is a British naval station and therefore very strongly fortified. The city is not healthful and at night is practically deserted. There is a Botanic Station in Castries and we saw some large *Castilloas* and a huge *Ficus Elastica*. Rubber planting had not much hold there; indeed this island, which has excellent soil and a wonderful climate, is only slightly developed. The interior contains thousands of acres of Crown Lands open for settlement, but the alleged unhealthfulness, together with the presence of the deadly Fer-de-Lance, has led settlers to choose places free from such drawbacks.

LARGE *Ficus*, BOTANICAL GARDENS, ANTIGUA.

DOMINICA.

Dominica is really tropical, mountainous, rugged and fertile. Although only 29 miles long and 16 miles wide, it has 70,000 acres under cultivation. The interior of the island is still covered with virgin forests. A roadway suitable for horseback riding encircles the island and several bridle paths cross it. This island is volcanic, and cacao, limes, coffee and spices are produced in great abundance. In spite of the heavy rainfall, 80 to 200 inches, it is extremely healthful. Insect pests, poisonous reptiles and even malarial mosquitos are conspicuous by their absence. The people, of course, are black, except about 1 per cent. of whites, and the capital, Roseau, is an enterprising modern little city.

A diminutive black boy insisted on guiding us to the Botanic Gardens, and amazed us with his knowledge of botanical names. Here we saw some hundreds of *Castilloas*. There was also an

immense *Ficus Elastica*, 19 years old, which had been tapped for the first time some three years ago, and had given about three pounds of excellent rubber. The department has distributed many thousands of *Castilloas* to the planters on the island, and there were numbers of fine plantations in embryo. We happened into the Botanic Gardens just as Mr. Jones, the curator, was overseeing the tapping of some *Castilloas*. This was accomplished by

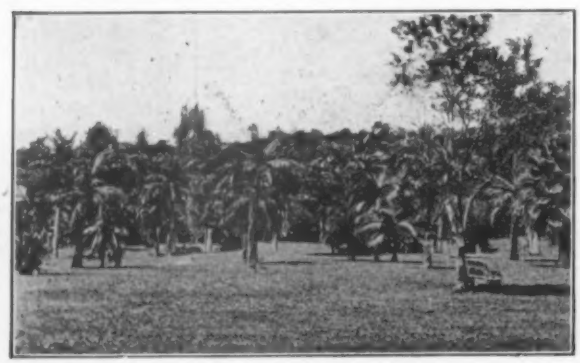
A DOMINICAN VILLAGE.

MARKET STREET, ROSEAU, DOMINICA.

horizontal chisel cuts, the latex flowing down into a palm leaf apron, caught around the base of the tree, and draining from that into a pan. Coagulation was effected by boiling.

There were also *Heveas*, 20 to 30 feet high, eight months old and 6 inches in diameter; some *Sapium Jenmani* and *Sapium Acuparium*, eight years old; a fine *Ficus Vogelii*, nine years old; a *Mascarenhasia Elastica*, 20 feet high; *Landolphias*, *Funtumias*, *Mimusops* and other rubber and gutta producers. Indeed, in no botanic gardens that I had visited was there such a variety of thrifty, full-grown rubber producers as was found there. Of course many of these trees have only a problematic value, and the planters were not planting them. But many plantations throughout the island were planting *Hevea*, and with cheaper labor, good soil and an ideal climate should do well with it. There is the possibility of hurricanes, but the island has not had one for fifty years, and insurance companies give very fair odds against the appearance of one.

A fine State highway, 18 miles long, from Roseau to the fertile interior of the island, traversing some of the most picturesque and beautiful valleys in the world, is projected and will soon be an accomplished fact. With land at $2.50 per acre, and



BOTANICAL STATION NO. 2, DOMINICA.

RUINS OF ST. PIERRE, MARTINIQUE.

labor at 30 to 36 cents per day, the country thus made accessible is sure to be turned into plantations, and rubber is equally sure to be one of the products.

MARTINIQUE.

Everyone is interested in Martinique, and those who can, have a look at Mont Pélée. The view is apt to be unsatisfactory, however, as the top of the mountain, where the crater wrought so much damage, is almost always hidden by heavy rain clouds. Several times I had passed it close in shore without a view of the summit. One never-to-be-forgotten time, however, the clouds suddenly lifted and drifted away and the cinnamon brown peak with the obelisk outlined clearly against the sky was startlingly apparent. It was in the afternoon, and the light was just right, so that even without the aid of glasses we could plainly see the seamed and riven slopes scored by molten lava and torrential rains, the whole upper half suggesting a convulsion of nature suddenly petrified. Before the eruption the mountain was clothed with a tropical jungle almost to its top. After it, everything green had disappeared from the mountain and the slopes that led down to St. Pierre. The undaunted tropical growths, however, are again struggling up the scarred rocks, choking the ravines and blotting out all trace of the disaster. The hardy native fishermen have also returned, and their little settlements are scattered along the shore, even in the shadow of the mountain. St. Pierre, however, still lies in ruins. The wrecks of its beautiful buildings are covered with tropical growth, the home of the Fer-de-Lance, avoided by all but the most intrepid of tourists.

The port of call for the steamboats is Fort de France, with a magnificent harbor well protected and plenty of deep water. Three French men-of-war anchored there were indulging in target practice, using Maxims, while we were there, and they made wonderful scores, counting the times they missed. The city is not particularly safe after nightfall, and the boatmen untrustworthy and surly. A Baltimore negro served as guide and showed us the big market, the best we had yet seen, and the regulation city sights.

There is some rubber in Martinique and there is no reason why there should not be a great deal, as much of the land is suitable

for its cultivation. On the great Imperial road that runs for some six miles out from Fort de France, the shade trees are *Heveas, Castilloas* and *Funtumias*. The two first named did not look particularly thrifty, but the *Funtumias* had grown luxuriantly, and would do well if rid of the scale which is beginning to attack them.

Martinique in a way is very modern. The people accept Amer-

CAMP BALATA, MARTINIQUE.

ican money very readily, and there are good carriage roads to various parts of the island. Travellers have no difficulty in finding entertainment at the various plantations, and the country is really safer and pleasanter than the city.

GUADELOUPE.

Through coral islets and over coral reefs into the land-locked harbor of Guadeloupe we came early one morning. Our landing place was the town of Basse Terre, which we found to be quite a large place. It was exceedingly French in architecture and general appearance, and anything but French in its lack of cleanliness. We did the town in a little ramshackle carriage, the horse on the dead run, in spite of our wish to go a little slower that we might observe the customs of the place. The outlying districts were exceedingly pretty and were crowded with country negroes

THE VOLCANO "LA SOUFRIERE," GUADELOUPE.

coming to market, and also lined with exceedingly persistent beggars. Guadeloupe is healthful, fertile, and has one semi-quiescent volcano, La Soufriére, which emits sulphurous fumes in abundance. The average temperature is from 68 degs. to 70 degs. Cocoa, coffee and cotton are raised, and rubber could be cultivated, although as far as we could learn nothing had been done in that direction. Leaving this last of the French islands we were really started for Trinidad and its rubber plantations.

THE PASSING OF THE CARRIAGE.

THE march of progress is an exceedingly interesting phenomenon to contemplate, but it is often rather hard on the things that happen to be in its way. For instance, there is the automobile, which is undoubtedly a great blessing to humanity, and has opened up vistas of activity never before dreamed of; but it has hit the carriage trade exceedingly hard.

A dozen years ago the section of New York lying along Seventh avenue and Broadway, north of Long Acre Square, was given over to the carriage trade. This trade had originally started far downtown, but as society moved uptown the shapely Victorias and Broughams and ornate and expensive harnesses that society demanded moved uptown also, to accompany the handsome thoroughbred, until they finally found convenient and suitable quarters in the district just mentioned. But a stroll through those streets now shows how great a change has taken place. Either the carriage builders, who ten years ago had large and handsomely equipped exhibition rooms have disappeared, or, as it is the case with the leaders in that industry, they have swung over into the ranks of the enemy and gone zealously into the production of automobiles. A wonderful change has taken place, too, in the physical aspect of that section. Where ten years ago there were little one-story blacksmith shops, which naturally associated themselves with the more pretentious horse and carriage markets, there are now imposing ten and twelve-story buildings, devoted exclusively to the display and sale of automobiles, tires and other accessories.

There is being erected at present, on what hitherto has been only a vacant lot, a 20-story building, the first 5 floors of which are to be utilized exclusively in the exploitation of tires.

It was only some two years ago, or perhaps less, that the first taxicabs appeared in our large cities; now they have almost driven the horse-drawn cab off the streets, and the man with a hansom cab that he wishes to dispose of will find himself fortunate if he can get one-tenth its original cost.

The huge commercial trucks, used by wholesale grocers, brewers, and in other lines of business demanding the local transportation of large volumes of heavy goods, are being very rapidly displaced by the motor truck. The construction of horse-drawn vehicles of every description is rapidly declining and must necessarily continue to decline; for it is simply a case of the survival of the fittest. The motor is more efficient, more reliable and more economical than the horse, and as far as concerns the greater part of the city work which the horse has hitherto done, he will have to yield to his all-conquering gasolene rival.

SOME MORE "ASBESTOS" BURNS.

There seems to be a good deal of trouble in various localities in Maine with so-called asbestos fire protection. The latest report comes from Lewiston to the effect that the proprietor of a local foundry purchased some "asbestos paper"—guaranteed to be fireproof—to place around one of the furnaces in order to protect the adjacent wood work. A few hours after this "asbestos" fire-proofed paper was placed near the furnace it was all ablaze, which would seem to indicate that it was more paper than asbestos.

David Bridge & Co., Manchester, England, who have been known for many years as general suppliers of rubber machinery, are now manufacturing a full line of rubber reclaiming machines, covering every sort of machine used in this business.

The Rubber Industry and the Census of 1909.

ALTHOUGH complete figures are not yet available for the United States Census of 1909, THE INDIA RUBBER WORLD is enabled (through the courtesy of the Bureau of the Census) to present general results of an approximate character.

Table A shows the comparative figures for the three census years 1899, 1904 and 1909, under the three main divisions: belting and hose, woven and rubber; rubber boots and shoes; and rubber goods not elsewhere specified. The figures are shown for the number of establishments and hands, as well as for the principal elements of cost and the value of products.

In the aggregate the 1909 production of the three above-named distinctive forms of the rubber industry represented $202,886,000, against which may be counted: Wages, $25,620,000; salaries, $8,205,000; materials, $126,274,000; general expenses (estimated), $10,000,000. These four items make a total of $170,099,000.

These figures would show an aggregate difference of $32,787,000 between cost and net value, or about 19½ per cent. on the outlay.

Making a rough approximation of the separate amounts, the following results are obtained (in millions of dollars):

	Belting and Hose.	Boots and Shoes.	Other Goods.	Total.
Value of products	25	50	128	203
Elements of cost	19½	42½	108	170
Difference estimated	5½	7½	20	33
Equalling about	27%	17%	18½%	19½%

The compilation of results shown by the census tables, makes no allowance for interest on capital, and is necessarily of an approximate character, being founded on returns made in a more or less exact manner to the special visiting agents of the census authorities.

While it is as yet uncertain whether any closer tabulation will be presented of the 128 million dollars' worth of unspecified rubber goods, it is to be hoped that the importance of the rubber industry will be regarded as meriting such consideration on the part of the census authorities.

Meanwhile, apart from the distinctive rubber industries, in which rubber is used to a large extent, there are a number of industries in which that material is more or less employed, which also call for reference, although the proportion of rubber they use cannot be exactly stated. The aggregate production of these accessory industries is shown in table B as $126,404,000; a proportion of which requires to be added to the total for distinctive rubber industries in table A ($202,886,000) to arrive at the importance of rubber manufacturing as an element of national industry.

Taking the grand totals of the direct and accessory branches of rubber manufacture, the following results are obtained for the census years 1899, 1904 and 1909:

	Value of Products. 1899.	1904.	1909.
Table A (direct rubber industries)	$100,598,000	$129,132,000	$202,886,000
Table B (accessory industries)	49,212,000	80,848,000	126,404,000

Progress all along the line thus marks the development of rubber and kindred industries during the three census periods of which the results are presented.

A dissection of the figures of production by States is being prepared and will be dealt with at a later date.

TABLE A.

SUMMARY OF CENSUS RESULTS OF DISTINCTIVE RUBBER INDUSTRIES.

	Number of Establishments.			Capital.			Horse Power.			Wage Earners (average number).		
	1899.	1904.	1909.	1899.	1904.	1909.	1899.	1904.	1909.	1899.	1904.	1909.
Belting and Hose (woven and rubber)	25	39	46	$6,020,000	$15,909,000	$24,260,000	5,612	13,491	20,547	2,025	4,390	6,319
Rubber Boots and Shoes	22	22	22	33,668,000	39,442,000	43,905,000	25,017	26,084	25,903	14,391	18,991	17,612
Rubber goods not elsewhere specified	261	224	227	39,302,000	46,298,000	98,507,000	40,835	48,381	79,062	20,404	21,184	26,521
Total	308	285	295	$78,990,000	$101,649,000	$166,672,000	71,464	87,956	125,512	36,820	44,565	50,452

	Wages.			Salaries.			Cost of Materials.			Value of Product.		
	1899.	1904.	1909.	1899.	1904.	1909.	1899.	1904.	1909.	1899.	1904.	1909.
	$	$	$	$	$	$	$	$	$	$	$	$
Belting and Hose (woven and rubber)	982,000	2,057,000	2,956,000	380,000	984,000	1,384,000	4,528,000	10,787,000	14,505,000	6,886,000	17,791,000	24,729,000
Rubber Boots and Shoes	6,427,000	8,867,000	8,544,000	597,000	874,000	1,415,000	22,683,000	32,000,000	29,577,000	41,090,000	48,345,000*	49,721,000
Rubber Goods not elsewhere specified	8,082,000	9,412,000	14,120,000	2,216,000	2,857,000	5,406,000	33,482,000	38,912,000	82,192,000	52,622,000	62,996,000	128,436,000
Total	15,491,000	20,336,000	25,620,000	3,193,000	4,715,000	8,205,000	60,693,000	81,699,000	126,274,000	100,598,000	129,132,000	202,886,000

*Estimated.

TABLE B.

VALUE OF PRODUCTION OF PRINCIPAL ACCESSORY INDUSTRIES IN WHICH RUBBER IS USED.

	1899.	1904.	1909.
Insulated wires and cables	$21,292,000	$34,520,000	$51,625,000
Buttons	7,696,000	11,134,000	22,708,000
Dentists' materials	3,721,000	7,810,000	10,836,000
Hand stamps, stencils and bands	2,611,000	2,811,000	3,673,000
Pens (fountain, stylographic, etc.)	1,706,000	2,774,000	4,739,000
Steam packing	3,494,000	8,952,000	12,160,000
Surgical appliances and artificial limbs	4,682,000	7,269,000	12,399,000
Toys and games	4,010,000	5,578,000	8,264,000
Total	$49,212,000	$80,848,000	$126,404,000

HOW THE CENSUS WAS TAKEN.

The United States government took great pains to obtain the fullest possible information from every manufacturing plant in the country. A carefully prepared schedule was drawn up, specially dealing with the items affecting manufacturing costs. This schedule was sent in advance to every factory, and in due time a corps of special agents (selected by competitive examination) was set to work, calling on the various factories, explaining the questions asked and seeing that the answers given were fairly accurate. These agents were men of local knowledge and statistical experience, not merely "enumerators." The results shown by annexed figures may therefore be considered reliable.

THE STORAGE OF RUBBER CEMENT.

WITH a costly product like rubber cement the prevention of waste is a matter of considerable moment. It is important that every gallon purchased should be used, and this result cannot be attained when the wooden barrel, which has served for transportation, is then utilized for storage. The staves being porous, they become warped through changes in temperature, while this defect is further increased by rough handling. The barrel is not and cannot be made airtight, so that its contents solidify through the evaporation of the thinning liquid.

This loss represents 20 per cent. per week, so that at the end of that period 100 gallons of cement only represent 80 gallons. It is claimed that all this loss can be stopped by using a "Bowser" equipment; so that the buyer of fifty gallons, by transferring that quantity, when received to the Bowser tank, can absolutely count on using fifty gallons.

PLATE 1. MODEL RUBBER CEMENT STORAGE SYSTEM.

Such a result is obtained by the possibility of ensuring the delivery of any desired quantity, by setting the indicator to the quantity desired, when a single stroke of the pump handle delivers just the amount needed.

A particularly valuable feature of the Bowser system is the absence of the risk of fire. Up to the present, firemen have been afraid to go near a fire in a cement house where the ordinary methods of handling cement are in use, while they now fight fire alongside of a Bowser equipment without the least fear. This system has the unqualified endorsement of insurance experts.

Its operation is shown in the subjoined cuts; Fig. 2 illustrating its detailed arrangement, while in Fig. 1 the cement is stored in a separate building, but handled in the factory instead of in the cement room.

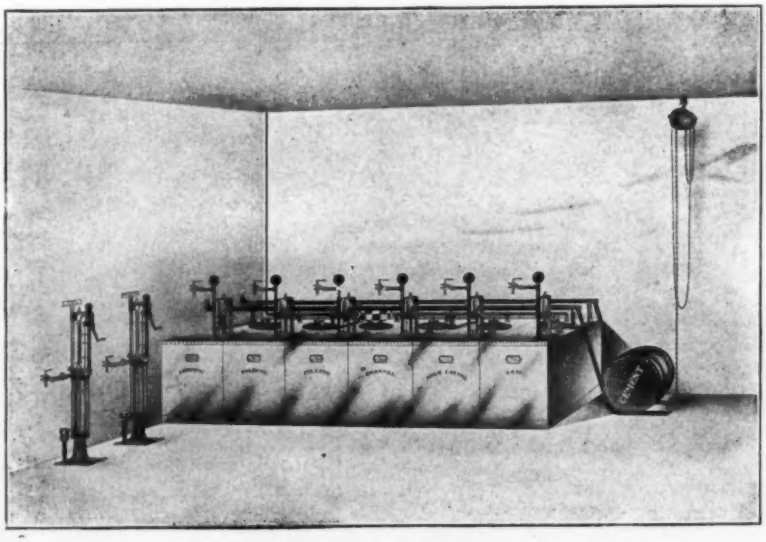


PLATE 2. MODEL RUBBER CEMENT STORAGE SYSTEM.

The "Self-Measuring Rubber Cement Tank" is made by S. F. Bowser & Co., Fort Wayne, Indiana.

According to Consul Report 8472, a firm in Germany wishes to get in touch with American manufacturers and exporters of rubber abdominal and other bandages and rubber stockings.

GUTTA-PERCHA-TISSUE CEMENT.

IT was at a meeting of shoe men, and a shoe manufacturer was speaking on the subject of "Efficiency." Most of his talk was on the proper adjustment of machinery, but one point he made may be of interest to the readers of THE INDIA RUBBER WORLD.

Shoe manufacturers have for years been in the habit of "backing" the finer, thinner qualities of leather, by cementing strong cloth to the under side, to give greater strength and thickness, and to prevent stretching. This Western manufacturer, some years ago, found that case after case of shoes had been returned to him because the solvent in the rubber cement had penetrated the cloth, and not only stained the lining, but collected dust and dirt.

"It was up to me," he said, "to stop that trouble. At that time I had a suit of clothes repaired at my tailors. I saw him take a little strip of gutta-percha, thin as tissue paper, and iron it between the thicknesses of cloth in the hem of my trousers, sticking them together, where stitches would have shown badly. This solved my problem. I got some of that gutta-percha, and backed my leather. You Yankees afterwards came out to sell us backing cloth, and we bought it, but up to that time we made our own backing cloth. We copied that from the tailor, long before you ever sold it."

The use of gutta-percha tissue was for years confined almost exclusively to the tailoring trade. Today it has a wider use, many trades utilizing it because of its efficiency and convenience. Hat makers use it to stick labels in their hats. Box makers find it convenient in making velvet-lined cases. The metal cases for holding spectacles and eye-glasses have their velvet linings and the leather coverings cemented with this tissue. For all these purposes it is less messy than glue, more adhesive than paste, and less likely to penetrate than rubber cement.

For many years all of this material used in this country was imported from Germany, but American manufacturers experimented, and after many failures, and at a very considerable expenditure of money, its production has been a success in this

country, and a recent consular report says that Germany now exports practically none to America, its trade being entirely destroyed by American competition.

Notwithstanding its wide use, the manufacture is confined to but few houses. There are now two houses in New York and one in Boston which have succeeded in producing a really effective and satisfactory article, and these supply the entire demand.

As might well be imagined, the exact composition of this adhesive is a carefully guarded secret. Broadly stated, however, it is a compound of gutta-percha and other guttas and balata, the former giving adhesiveness and the latter strength. The gums are thoroughly mixed, gently heated and kneaded to the consistency of a somewhat thin dough, by being run through and through heated cylinders, and then pressed out between polished steel calender rolls so adjusted as to give the resulting sheet the desired thickness. This runs from one and one-half thousandths of an inch (.0015 in.) to four or five thousandths of an inch (.004 to .005 in.).

The material comes from this machine in a continuous sheet, a yard wide, and this is suspended for a proper length of time, to thoroughly season. It is then put up in the various forms desired by the trade. One style of package is much the same shape as a bolt of dress goods. The yard-wide tissue is folded in yard lengths back and forth, one hundred yards in a pile, and then each side of the pile is folded towards the middle, and one-half folded over the other. In this form it is sold at about 65 to 75 cents a pound, according to quality. The various thicknesses run from four to twelve yards to the pound. Other forms in which it is marketed are rolls, like ribbon, of any desired width, according to the purpose for which it is to be used.

One important use of this tissue is in the manufacture of the backing cloth mentioned above. A sheet of this tissue and a thickness of drilling, or cotton cloth, are run together, under pressure, between heated calenders. This is sold to shoe manufacturers, who back up their light leather by hand. Other houses make a business of backing leather or fine cloths for the shoe trade, the work being done on machines which are not open to the inspection of the public.

New uses are constantly being found for this cement, its cleanliness, convenience, pliability and absence of moisture being properties which commend it to many mechanical trades.

A NOVEL USE FOR RUBBER CEMENT.

PRESENT-DAY illustrating has made the use of the air-brush almost universal among artists because of the extreme delicacy of the effects produced and the facility with which it produces them. A novel use of rubber cement has been discovered in connection with the use of this tool, which may be of interest to the trade.

The air-brush is a modification of the well-known principle of the atomizer, adapted to throw a fine spray of thin ink as the artist directs to produce the effect desired. A finer or coarser line may be made by holding the tool nearer to or further from the paper, and a tint can be spread over a large surface and shaded, from the merest, lightest gray to the deepest black, by proper manipulation and adjustment.

After the outlines of a drawing have been made and properly inked in, it is frequently desirable to put in the tints and shades with the air-brush, and yet these shades must be kept from those portions of the drawing which represent the high lights.

Some artist discovered that rubber cement, thinned down with benzine, would hold two pieces of paper together as would paste or mucilage, yet these sheets could be easily separated when desired, even after several hours' contact. This discovery is now put to very practical use by many artists and draughtsmen.

Upon the unfinished drawing is poured a small quantity of this thinned cement, which is then spread with the finger. Over this is pressed and smoothed down a piece of tracing paper, thus covering, but not hiding the drawing. Then, with a sharp knife, skilfully used, sections of the tracing paper are cut around, and these pieces raised and removed so as to expose those portions which are to be finished with the air-brush. Then the spraying is done, without the danger of overlapping the lights, and with an obvious saving of time and trouble. This work being done in a satisfactory manner, the mask of tracing paper is easily peeled off and the drawing finished up as desired.

Of course, a fine film of rubber remains upon the face of the drawing. This is easily and quickly removed by simply rubbing with the finger, or with an ordinary sponge rubber eraser, the cement being rubbed into little rolls or threads, and leaving on the drawing no trace of the treatment to which it has been subjected, in this somewhat mechanical manner, to secure an artistic result.

In this connection it might be well to state that where variation of shade or tint is desired, as, for instance, a spot or line of high light in the tint or shade, the rubber eraser, deftly used, brings out the effect quickly and satisfactorily.

The cement used for this purpose is common bicycle tire cement, thinned down with benzine, to the consistency of cream or syrup. We understand that a preparation of this kind—in fact, this identical mixture—was for some time exploited under a fanciful name by a couple of artists, who succeeded in working up a fair demand for it, but who had too little of the commercial temperament in their make-up to continue and expand the business.

A SAMPLE OF A RUBBER MAN'S ART.

THE advertising manager of the Republic Rubber Co., Web Brown, is also a cartoonist of some note. At the recent convention of fire chiefs of the United States and Canada he drew a number of pictures of the leading men at that convention which attracted a good deal of attention. We reproduce herewith his picture entitled "A Night Alarm at Bradford, Pa.," which shows

A NIGHT ALARM AT BRADFORD PA

the fire department of that city in active operation. The rings that appear back of the moving machine would naturally be taken for tires that had not been able to keep up the pace were it not that there are five of them while the machine has only four wheels. They are probably only punctures made in the atmosphere by the rapid movement of the engine. The usual fire department mascot will be seen galloping swiftly in the foreground.

The Rubber Sundries Manufacturers' Association.

THE annual meeting of the Rubber Sundries Manufacturers' Association was held this year on April 11, in the directors' room of the Motor and Accessory Manufacturers' Association in New York, and was followed by the usual annual banquet at the Waldorf-Astoria in the evening.

At the business meeting held in the morning the following officers were elected for the coming year: George B. Hodgman, president of the Hodgman Rubber Co., president; Frederick H. Jones, president of the Tyer Rubber Co., vice-president, and E. E. Huber, of Eberhard Faber, secretary and treasurer.

The officers of the association hoped for the presence of Mr. Henry C. Pearson, editor of THE INDIA RUBBER WORLD, as their guest, as Mr. Pearson has been present at each of the banquets for a number of years past, but as he had not returned to New York it was decided to make the banquet an informal family affair. The table was set in the form of a square, open at one end, opposite the presiding officer, and the floral decorations were red carnations, with a mass of smilax covering the sides of the table toward the center of the square.

On the printed menu, about half way down, was printed a black dash, with question marks at either end, which aroused some curiosity on the part of those in attendance, until that part of the dinner indicated by the mark was reached, when President Hodgman arose and announced that, contrary to the usual custom observed in the past, there would be no speeches whatever, and that the entertainment for the evening would consist of a "Cabaret" performance, which is so popular at many of the restaurants at the present time. This statement was received with much apparent satisfaction, and from this point on during the remainder of the dinner and the rest of the evening, the members of the association and their guests were entertained by a number of artists who are now appearing at various well-known places in New York. From the opinions expressed by the diners at the close of the dinner it was evident that the innovation had been a very successful departure from precedent, and a vote of thanks was extended to the dinner committee for providing such a unique and enjoyable banquet.

Here is the menu, with the interrogative line that ushered in the Cabaret:

MENU.

❖

Cocktail aux huitres

❖

Potage d'oseille à la Française

❖

Radis Olives Céleri Amandes salées

❖

Filet de bass à la Mornay
Salade de concombres et tomates

❖

Poitrine de dinde farcie, sauce diablé
Haricots verts sautés au beurre
Pommes de terre, Laurette

❖

Sorbet prunelle

?———?

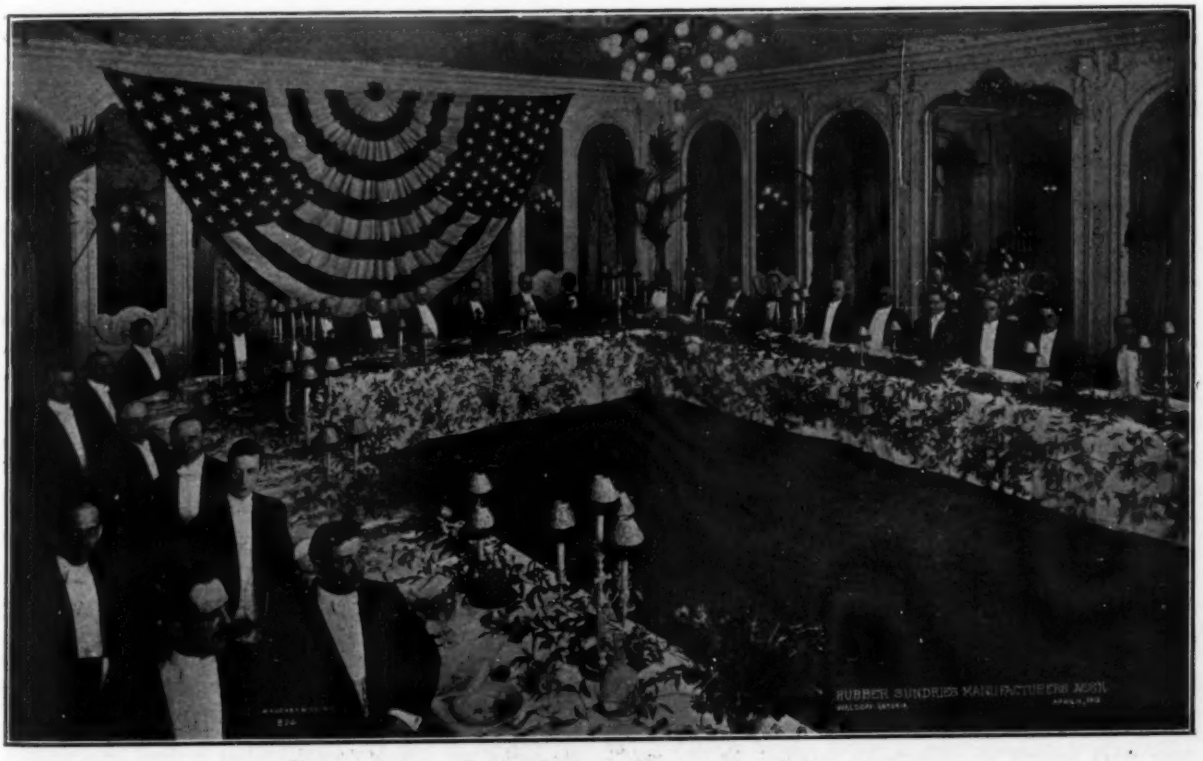
Pigeonneau de Philadelphie rôti sur canapé
Salade de laitue à la Russe

❖

Plombière aux marrons, sauce vanille
Petits fours Fruits
Café

POMMERY SEC

The Waldorf-Astoria, le 11 Avril, 1912.



BANQUET OF THE RUBBER SUNDRIES MANUFACTURERS' ASSOCIATION.

THE RUBBER TRADE IN AKRON.

By a Resident Correspondent.

RUBBER stocks in Akron have been very active again this last month. The directors of The Goodyear Tire and Rubber Co. took definite action on the proposed refinancing. The new capital will be ten million common and five million preferred, of which five million common and two million preferred will be issued, leaving five million common and three million preferred in the treasury. The present capital is $2,500,000 common, of which $2,284,100 is outstanding and one million preferred is outstanding. The present holders of common will get 100 per cent. common bonus and the right to subscribe for $341,800 of new common at par. The old preferred is to be retired at 105, and holders have the right to subscribe for the new preferred, share for share, at par, after which rights to the new preferred revert to the common stock. The new preferred is 7 per cent. cumulative, and is retirable after 1915 at 120. In the meantime the five million common and three million preferred held in the treasury will be used for the best interests of the company. It is not stated what dividend the new stock will pay. The new capital seems well within the range of the earning power of the company. The old Goodyear common has been selling at from 450 to 460.

Diamond Rubber stock has been selling at from 320 to 325. The new Goodrich preferred is over-subscribed, it is claimed, for nearly double the amount of stock. Firestone common has been selling in the neighborhood of 246, and Miller at 166 to 168.

The B. F. Goodrich Co. has just paid the regular quarterly dividend on both common and preferred. The Diamond Rubber Co. quarterly dividends were paid on the 20th, and Firestone common and preferred were paid April 15. The Swinehart quarterly dividends will be paid the fore part of May.

This new stock issue of the Goodyear is subject to the approval of stockholders at an early meeting. It, no doubt, will be approved.

* * *

The B. F. Goodrich Co. has published a neat and instructive catalog covering the Pacific Coast service. This gives photographs of points of interest along the Pacific Coast, pictures of each of the persons in the various branch offices, the various routes, pictures of crowds attending the "Tree-to-Tire" entertainments, and illustrations of the advantages of Goodrich tires.

* * *

The Goodyear Tire and Rubber Co. is establishing a branch in the City of Mexico, having leased a three-story building at the corner of Avenida Juarez and Baldaras. J. C. MacFaydean, formerly in charge of the Indianapolis branch, will have charge of the Mexico City branch. S. F. Fuller will be secretary and treasurer.

* * *

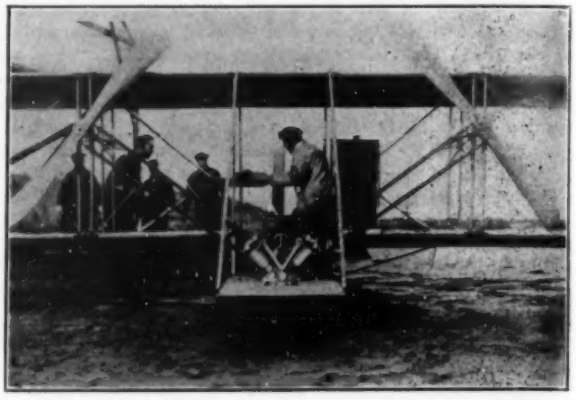
Mr. Edward C. Newbower, who for several years has been connected with The Standard Tire Protector Co. of Akron, is manager of their branch in San Francisco, California.

* * *

The American Tire and Rubber Co. have commenced active operations and have a complete plant. They have been having success in the sales of their five-minute cure cement and are strengthening their inner tubes between the beads and where they come in contact with the rim, thus making that part of the tube which suffers the most wear, more able to withstand it. It is claimed that its construction, together with its toughness, prevents the tube from becoming pinched between the bead of the casing and holds it vise-like; a rusty and uneven rim causing blow-outs and in general shortening the life of the tube.

* * *

Mr. F. H. Mason, vice-president of The B. F. Goodrich Co., donated 20 acres to the city of Akron for playground purposes, and in addition agreed to donate to the city $3,000 per year for three years towards its maintenance, provided the city would improve the property so it could be used this summer. This offer was accepted. This land is located along the Little Cuyahoga River Valley between Lods and North streets, and within a mile of the center of Akron. This park is to be called Elizabeth Park, in memory of his daughter, who died recently, and is suitably located, this being a residence district for people of

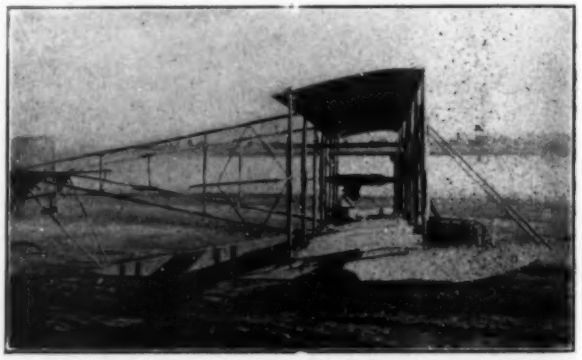


CURTIS HYDRO-AEROPLANE AT SAN DIEGO, CAL.

limited means where a park that will give bathing, skating and room for all athletic games will be very beneficial and highly appreciated. Mr. Mason is highly praised for his generous gift.

* * *

Melvin Vaniman has spent the winter rebuilding and repairing the balloon "Akron," which will have neither a wire envelope nor a rubber bag. The "Akron" will make the trip across the ocean as soon as there is assurance of good weather. Mr. F. A. Seiberling, president of The Goodyear Tire and Rubber Co., announces that he will manufacture and market the recent invention of Mr. Vaniman which solves the problem of equilibrium of the dirigible balloon. Mr. Seiberling says: "I believe Mr. Vaniman's invention is practical and sane and will make an airship safe as far as equilibrium is concerned. We will manufacture these rubber bags, which will be the air ballast of the dirig-



SIDE VIEW OF CURTIS HYDRO-AEROPLANE.

ible, as soon as the minor details are worked out. These machines are practical and can carry freight as well as passengers."

* * *

Are the aeroplane and hydroplane practical?—The success of Lieutenant T. Gordon Ellyson and John T. Powers in flying an aeroplane over Chesapeake Bay from Annapolis to Buckroe Beach, a distance of 145 miles in 147 minutes, and the fact that Glenn H. Curtiss daily in his school at San Diego, California, is enabled with his hydro-aeroplane to rise from the water, securing almost any altitude desired, landing at times on a wharf or

on board vessels, developing a speed in the air of as high as 70 miles per hour, and on the surface of the water, as high as 45 miles per hour, give conclusive proof of the practical nature of the hydro-aeroplane. This proof has been further strengthened by the fact that Lieutenant Ellyson and J. T. Powers, in their trip down Chesapeake Bay stopped their engine and allowed the hydro-aeroplane to settle on the water, and then changed the gear to the propellor shaft and ran the machine ashore; and by the exhibitions given at over 200 American cities, flying at times when the weather conditions were decidedly adverse. These achievements demonstrate the advisability of the use of the hydro-aeroplane as an auxiliary to naval vessels for recognizance and conveying dispatches, and for light transportation in war and for attacks from overhead. The governments most advanced in naval architecture have taken a decided step in exploiting the use of these machines. Even the Russian government has ordered hydro-aeroplanes to further Russia's military and naval power.

The high efficiency of the present aeroplane and hydro-aeroplane is due partly to the great care on the part of the various rubber manufacturers to secure the highest quality of rubber goods that is possible to be made for aerial purposes.

* * *

The original research work carried on in the various Akron factories, in rubber and articles entering into rubber goods, is equal to, if it does not surpass, the greatest universities, not only in this country, but also abroad. Experts are obtained not only from this country, but from foreign countries along the various lines that enter into rubber goods. These men are masters in their line. Although within the hum of the machinery, their research is carried on as exclusively as if they were in the laboratories of the great American, German or English universities, where they secured their original training. This is not only true of the composition of rubber and its compounding, but is true of the cotton fibre, wire and the various other elements that enter into rubber manufacture. Not only are these experts em-

CURTIS HYDRO-AEROPLANE OVER SAN DIEGO BAY, CAL.

ployed to aid the factory in the technical work, but other specialists are employed to aid the purchasing and sales departments. Men are hired in these factories who are able to talk and interpret practically every language spoken by civilized nations, whether it be the language of the coolie of Bombay, the Spaniard of Mexico, the Japanese of Yokohoma, the Portuguese of South America, the Russian of St. Petersburg or Odessa, the Chinaman of Peking or Hongkong, or the Brazilian along the Amazon.

* * *

E. W. Snyder, the chemist of The American Tire and Rubber Co., has obtained success in compounding Pará and mineral rubber. This company is using his method of splicing by steam curing, thus strengthening the splice.

THE RUBBER TRADE IN BOSTON.

By a Resident Correspondent.

TRADE is very generally satisfactory in this city. In some lines it opened late, owing to climatic conditions, but, as a rule, all lines are now busy. Particularly so is the tire business, which never showed such large sales in the first quarter of any previous year. The spring has been backward, but sales of hose, both of the garden variety and for industrial and fire use, are reported excellent. Belting sales are fair, and though the tendency is toward smaller orders, the aggregate business is satisfactory. Druggists' hard and soft rubber goods seem to be having a boom, if the present busy condition of the factories is any criterion. Boots and shoes have been ordered in larger quantities and further in advance than in the last few years, for two reasons; first, because of the long lingering of winter in the lap of spring, and second, the change back to the former policy of allowing an extra 5 per cent. discount for early orders.

* * *

The annual meeting of the Rubber Club of America, called for Monday, April 15, at the office of the Hood Rubber Co., was attended by only a few members. It was adjourned without doing any business, the election of officers being deferred until the adjourned meeting. This action was taken in the hope that at this later date ex-President Henry C. Pearson would be present and tell his fellow members of his recent trip up the Orinoco River, and illustrate his talk with lantern slides from photographs taken on the trip.

* * *

At the office of the Tremont Rubber Co. in this city there is being shown a special rubber boot manufactured by the L. Candee & Co. for the Japanese trade. It is quite a little shorter than the regular short boot, a No. 4, measuring 12 inches high from heel to top. Every customer grabs this boot and asks about the new style as soon as he sees it, and explanations are so frequently called for that it is suggested that a full descriptive ticket be attached to save repetition.

* * *

The new headquarters of the Beacon Falls Rubber Shoe Co. are being put into proper shape for the business of the house. The first floor has been lowered to a few inches above the street level, the brick dead-wall on Purchase street has been entirely replaced by plate glass windows, and a new front shown on the Congress street side. Manager Gray will have an establishment to be proud of when he moves in next month.

* * *

The Boston Belting Co. has appointed a new manager for the New York office, Mr. W. E. Greene, who was formerly with the W. Bingham Co., Chicago. He has already assumed his new position.

* * *

Frank Appleton is a busy man these days. His factory is turning old rubber into new and the demand for his product keeps him hustling. But in addition to this, which is enough to keep half a dozen men busy, he is preparing to take a hundred or more members of the Ancient and Honorable Artillery to Europe next month. They will dine with King George the Fifth and a number of lesser notabilities in England, and then make a tour of continental Europe. Mr. Appleton is preparing a few speeches for the prandial occasions, and studying foreign languages so as to talk shop to fellow members of the rubber and reclaiming trade abroad.

* * *

There are now on exhibition at the Museum of Fine Arts in this city the successful competitive designs for the tile decoration of the children's room at the Forsyth Dental Infirmary, that noble memorial to the well-known rubber men of that name. The designs chosen are "Roxbury Giant," "Rip Van Winkle" and "Hiawatha," by Miss Florence Lilly Young of Boston, who re-

ceived therefor the first prize of $250; "Jason and the Golden Fleece," by R. C. Chase of New York, who won $150 as the second prize, and "The Blue Bird," by H. H. Parker, of Philadelphia, third prize, $100. The children will enjoy studying these familiar subjects while waiting to avail themselves of the noble charity instituted by the Forsyth family.

* * *

Walking down Congress street the other day with a friend, THE INDIA RUBBER WORLD correspondent noticed a wagonload of discarded automobile tires in front of the storehouse of J. H. Stedman & Co. Wishing to show off some of his technical knowledge, the correspondent asked his friend if he knew where all these bursted tires go to in the end. The answer was explicit, immediate and emphatic. This friend said, "No, I'm not sure where they go; but if they go where their owners consign them, there must be a horrible smell of burning rubber in the hereafter."

* * *

The Walpole Rubber Co. has opened a handsome new store in "Automobile Row," at 757 Boylston street, where they are carrying a full line of automobile tires and accessories.

* * *

The walls of the office of a gentleman prominent in the rubber business in this city are adorned with many large photographs, each artistically framed. A very large proportion of these photographs are of groups of members of the New England Rubber Club and the Rubber Club of America, depicting them at the summer outings or the mid-winter dinners. While commenting upon these, the gentleman declared that he had made his last purchase of a picture of this kind. He had covered his walls and had room for no more.

His remarks regarding the enterprise of photographers were interesting, and one suggestion seems particularly sensible. He said: "These pictures are entirely too large. Their first cost, supplemented by the expense of framing, is too much, and they require much wall space. Then their general sameness is such that only one or two should be exhibited in a room as small as this. I like to have such photographs as souvenirs. They contain faces of my friends in the trade, some of whom are gone from among us. I believe that the photographers would sell more pictures if they made smaller ones and charged proportionately less. If they made prints about 8 x 10 inches, instead of these four times as large, the pictures could be pasted consecutively in a scrap book, or could be mounted on thin cardboard and held in a port-folio or binder, thus making a valuable record, easy to handle and not so large as to prevent its being carefully kept and frequently studied. I would like such a collection, but I'm done buying these big pictures."

The suggestion seems to have in it several grains of common sense, and your correspondent echoes the sentiment. He also suggests that anyone who may wish to prepare such an album or folio may be enabled to do so by collecting the excellent half-tone engravings of these (and other) trade gatherings which appear in THE INDIA RUBBER WORLD, usually in the number immediately following such meetings.

REAL RUBBER NEWS FROM KANSAS.

A recent issue of a Kansas daily contained some real rubber news. It stated that "the first cost of crude rubber is about 75 cents a pound. By the time it reaches the world's market it is worth $2.50 a pound." It will be seen from this that manufacturers who have recently been grumbling because fine Upriver Pará cost them $1.23 per pound are really in great luck, as they are getting their rubber at less than half price. It then goes on to state that there are 10 rubber trusts in the world, five of them in the United States. If this is true, it would seem to indicate that there is still work for Mr. Wickersham.

THE RUBBER TRADE IN CHICAGO.

By a Resident Correspondent.

GEORGE P. SHEPARD, secretary of the E. F. Norton Co., 620 Orleans street, narrowly escaped injury in an automobile accident on the occasion of the Birkenstein fire, which occurred April 6. He was dining in the downtown district when erroneously informed that the Norton company's establishment was on fire. While making a hurried trip to the scene in his automobile, the machine skidded while making the turn at Orleans and Indiana streets, throwing him to the street. Except for a few bruises he escaped without injury.

* * *

General Manager Baldwin, of the Cincinnati Rubber Manufacturing Co., was a recent visitor in Chicago, calling on the trade. He was more than pleased with business conditions in Chicago. H. G. Prigge, local sales agent for the company, with headquarters at West Jackson boulevard and Jefferson street, predicts a record-breaking summer season for the trade in this city.

* * *

Chicago friends of John H. Kelly, for nine years manager of the Chicago branch of the Republic Rubber Co., are congratulating him and wishing him success as sales manager of the company, to which office he was recently permanently appointed on the death of L. J. Lomasney, former vice-president and sales manager of the concern. Mr. Lomasney had been ill for several months and Mr. Kelly was made acting sales manager.

* * *

The Sealo Tire Co., of Chicago, recently moved into new quarters at 1409 Michigan avenue. N. L. Steinberg, president of the company, announced that he is preparing to take care of an unusually large amount of business this season.

* * *

Because of the successful sale of the Dahl tire filler in Illinois, the board of directors of the Punctureless Tire Co., of Illinois, at a recent meeting concluded arrangements with the parent company whereby the local company takes over the entire State of Indiana. General Manager C. J. Hagerling was enthusiastic over the new step. "I feel," he said, "that the highest tribute that can be paid to the Dahl punctureless tires is the constantly increasing number of sales we are making to prominent men, who, after carefully considering the matter of tire troubles and delays, have placed their orders for our tires."

* * *

E. B. McKay, Chicago manager for the Empire Tire Co., announces that there is to be no cut in prices so far as his company is concerned. He said that under no circumstances would the company sell direct to the consumer. "Our goods are staple the world over," he said, "and our prices will be the same as they have always been."

* * *

Returning from a three months' trip to the company's branches throughout the Western and Northwestern States, H. B. Ball, auditor of the Goodyear Tire & Rubber Co., stopped long enough in Chicago to give his opinion of the effect of the opening of the Panama Canal on business in the far West. "It is looked forward to by business men with enthusiasm," he said. "There exists a friendly rivalry between Seattle, Portland and Tacoma as to which city will make the best proposition to Eastern capitalists for the building of immense new docks on the Pacific Coast. In San Francisco open-air meetings are held almost nightly, and lobbyists have been appointed to attend Congress and solicit support of the bill for free tollage of American ships through the canal, and the taxation of foreign vessels. Pacific Coast merchants expect the West Coast to be the front rather than the back door of the continent."

A BOOK for everybody interested in tires—"Rubber Tires and All About Them"—this office.

THE RUBBER TRADE IN RHODE ISLAND.

By a Resident Correspondent.

APRIL closed with the rubber business in excellent condition in Rhode Island. Stock-taking was rushed by several concerns; one applied to the State Legislature for authority to increase its capital stock, and another sought permission from the same body to bridge a Providence street to provide for an enlargement of its plant. Faith in the immediate future and plans for an expansion of facilities for production are thus generally evident.

* * *

The Phillips Insulated Wire Co. was the concern which had a bill introduced into the General Assembly for the purpose of amending its charter so as to increase its capital stock from $2,000,000 to $2,500,000. The bill was referred to the Senate Committee on Corporations. It is stated by those in a position to know that it will be passed without opposition. The company has not, it is understood, any plans which call for an immediate expenditure of such a large amount of money, but the business is increasing so rapidly that an enlargement of its plant at Pawtucket, Rhode Island, is looked for. Ten thousand shares of the new issue are to be preferred stock, and 15,000 shares common stock. The pending bill, when passed, will permit the board of directors to issue this stock in quantities to suit itself, at any time after the new State tax thereon has been paid to the general treasurer.

* * *

The Revere Rubber Co., a branch of the United States Tire Co., is another concern which has a bill in the Legislature. This company has secured legislative permission to erect a bridge across Eagle street. The measure was introduced by Senator Jones of Cranston. It is understood that the company intends to erect a large storehouse opposite its plant for the purpose of taking care of its surplus stock and materials used in tire manufacture, and has plans for the connection of the two by a bridge at the second story, so as to secure a connection between them that will not interfere with traffic on Eagle street.

* * *

The American Wringer Co. at Woonsocket recently reduced its number of working hours from 60 to 56 per week, at the same time leaving the pay of its employes the same as it was before. This amounts virtually to a 7 per cent. increase in wages. Several meetings of the employes have been held lately. It is rumored that they intend to form a union and make a demand for an increase in wages.

* * *

Professor Walter P. Bradley, of Wesleyan University, has been invited by the United States Rubber Co. to devote the next year to organizing a department of research for the company, with headquarters at New Brunswick, New Jersey. Professor Bradley has been head of the department of chemistry at this university for twenty-two years.

* * *

Stock-taking at the National India Rubber Co.'s plant, Bristol, was started on April 1 and finished on April 6. The factory was reopened on April 8 with its full complement of 1,800 hands working. While account of the stock was being taken about 100 men were retained to make needed repairs on the buildings and machinery.

* * *

It is expected that the plans for the reorganization of the Consumers' Rubber Co., Bristol, which has been in the hands of a receiver since early in January, will be finished soon, and that the concern will be taken over by another company, which will issue certificates of indebtedness. All but two of the Bristol creditors have signified their willingness to place their affairs in the hands of the committee in charge of the reorganization, and many in other places have followed their example. The new company will receive the 17 per cent. allowed by the court on claims.

* * *

Knives used by men for cutting rubber have figured quite prominently in courts in this vicinity during the past two weeks. In one of the lower courts of Providence a man charged with assault with a dangerous weapon was acquitted. The court would not entertain a complaint that one of these knives could be considered a concealed weapon.

* * *

Another case of the same kind developed at Woonsocket, when Patrick O'Malley, a bootmaker in the employ of the Millville Rubber Works, was stabbed by an Italian fellow-worker. His condition again called attention to the habit of carrying these knives about, and, as a result, the police may attempt to prosecute the owners under concealed weapon charges.

* * *

For the benefit of the employes of the rubber and other plants at Bristol, an eight-day anti-tuberculosis exhibit opened there April 27 under the auspices of the State Board of Health and the Rhode Island Anti-Tuberculosis Society. Among the prominent speakers were Governor A. J. Pothier and Le Baron C. Colt, agent for the National India Rubber Co.

* * *

Colonel Merton A. Cheesman, of the Bristol Train of Artillery, one of the oldest military organizations in the country, who is also an official of the National India Rubber Co. at Bristol, was a speaker at a dinner following the 137th anniversary parade of that command on April 22.

* * *

John Gray, who for a long time was head of the cutting and the shoe rooms of the Alice Mill, Woonsocket, a subsidiary plant of the United States Rubber Co., died at his home, 419 Pond street, in that city, April 19, after a long illness. The funeral was held Monday, April 22, at St. Charles' Church. Conspicuous among the floral tributes were two pieces from the shoe and cutting rooms of the Alice Mill.

* * *

Felix W. Conley, 23, for several years an employe of the packing department at the factory of the National India Rubber Co., Bristol, died at his home in Bristol, April 1. The funeral was held at St. Mary's Church two days later.

THE RUBBER TRADE IN SAN FRANCISCO.

By a Resident Correspondent.

A BETTER feeling may be said to pervade the trade than has been noticed for some months past. There have been good rains at proper intervals to insure excellent crops, and this has inspired renewed business activity in all sections. The country continues to be prosperous, and the cities are showing a tendency to livelier trade. There has heretofore been complaint that conditions were unfavorable in the cities of the Northwest, in Oregon and Washington, but the reports this month indicate that there is great improvement all through the Northwest. In San Francisco conditions are particularly favorable. The people of this city are realizing more and more the advantages of uniting in concerted action for the future welfare of the community. The people have, at recent elections, appropriated large sums for municipal buildings and improvements, and as a municipality the city is showing more substantial signs of growth and development than ever before.

* * *

The City of San Francisco is about to advertise for bids for 20,000 feet of hose in accordance with the new regulations recently adopted, and the merchants are interested to know what the outcome will be. This city has been in the habit of compelling the manufacturers to bid on special private specifications, which

were generally so unsatisfactory to the manufacturers that there was always trouble in getting bids, and always a great deal of dissatisfaction expressed. In order to overcome this, the city proposed that all of the rubber houses get together and frame up a uniform set of specifications which would be broad enough to suit all of the manufacturers. During the past two months the local merchants have been bumping this proposition about without attaining very definite results. At last the city and everybody concerned have seen the futility of such a course, and the city has consented to allow the manufacturers to make bids without any restrictions as to specifications. This would be considered entirely satisfactory were it not for the test guarantees that are required. The city not only requires a pressure test on taking the hose, but also requires a guaranteed diminishing strength test from year to year thereafter. The manufacturers are willing to comply with the initial test and to guarantee against defects of material and workmanship thereafter, but they do not like to be responsible for pressure tests after the hose has passed out of their care and control.

* * *

Mr. Cook, manager of The B. F. Goodrich Co., reports that business at this time of the year is particularly good, and this includes all of the company's lines. Business is also picking up in the Pacific Northwest, especially in the State of Washington.

* * *

R. H. Pease, Jr., treasurer of the Goodyear Rubber Co., has returned from his trip to New York. He has been looking after the firm's interests in the East. R. H. Pease, Sr., reports that the recent storms have encouraged business. With snows in the mountains, business in the mining districts and also in the irrigation districts which needed water, has improved.

* * *

The Gutta Percha and Rubber Manufacturing Co. reports that business is showing improvement this month, and that the outlook is entirely satisfactory.

* * *

The Gorham-Revere Rubber Co. has opened a new store for the tire department on Golden Gate avenue near Van Ness avenue. Harry L. Parkman will be the manager. Mr. Parkman has been a regular traveling salesman for the firm for a good many years, and his friends are glad to see him promoted to the management of the new store.

* * *

John P. Costello, of this city, has recently been appointed as assistant to M. E. Murray, the manager of the San Francisco branch of the Republic Rubber Co. Mr. Costello is a well-known local business man, although heretofore very slightly identified with the rubber business.

* * *

The Diamond Rubber Co. and the United States Tire Co. had a lively game of baseball on April 14 which resulted in a score of 12 to 5 in favor of the former. C. A. Gilbert, new Western district manager of the United States Tire Co., pitched the first ball, and the man at the bat on the opposing team was C. E. Mathewson, Pacific Coast manager of the Diamond Rubber Co. J. A. Jones and R. L. Sargent were the batteries for the Diamond team, and Crusoe and Smith were the batteries for the other.

* * *

W. E. Parsons has been added to the traveling salesman force of the Goodyear Tire & Rubber Co. He will have charge of California territory from San Jose to the Tehachipi. In another month the San Francisco branch of this company will be installed in its new quarters at the northwest corner of Van Ness avenue and Sutter street. Walter N. Hunt, who for the past two years has been with this firm, has resigned to take a trip East, where he will look over the agencies with a view to starting in San Francisco for himself. Arrangements have been completed by this company to open an additional branch in Oakland, Cal. The new branch will be located on Broadway at Nineteenth street. A feature of the new store will be a complete line of the company's rubber floor tiling.

* * *

The Swinehart Tire and Rubber Co. has established its agency with the W. B. Guyton Tire and Rubber Co. of 1013 South Main street, Los Angeles, Cal.

* * *

The Fisk Rubber Tire Co. has just moved into its new quarters on Van Ness avenue. General Manager Pratt, of the Western branch of the Fisk Rubber Co., is more than pleased with the outlook for his firm on the Coast.

* * *

H. S. Firestone, of the Firestone Rubber Tire and Rubber Co., is now visiting in San Francisco.

* * *

The Weinstock-Nichols Co. of this city has recently organized a new department, known as the Inner Tube Insurance Department. Its purpose is to insure and repair punctures and blow-outs in inner tubes.

* * *

The Seattle-Mexican Rubber Co. has been organized and incorporated in Seattle, Washington. The authorized capital stock is $60,000. R. E. Cameron and C. H. Steffens are the incorporators.

* * *

Hughson & Merton, Pacific Coast agents of the Ajax Tire Co., have moved to their new quarters at 530 Golden Gate avenue.

* * *

J. D. Ralph, manufacturers' agent in this city, has moved to larger and more convenient quarters in the Phelan building on Market street.

* * *

Mr. Hall, representing the United States Rubber Co., of Chicago, is now in San Francisco on a pleasure trip.

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M. W. Bean, H. E. Frazier and J. Kilmer have organized the Empire Tire Repair and Supply Co., a corporation, at Spokane, Washington with a capital stock of $5,000.

THE RUBBER TRADE IN TRENTON.

By a Resident Correspondent.

THE rubber industry in this city shows marked improvement over the immediately preceding months. The majority of the plants are working full time, and those plants devoted to the manufacture of automobile tires are operating day and night shifts of operatives, but in the other lines, according to many accounts, there is still room for improvement.

One of the leading manufacturers who did not care to be quoted in discussing the trade situation in this section, said: "The unsettled condition of the tariff question has a marked effect on conditions in the rubber industry. It is true that many plants are booking orders for big shipments for railroads, but you will note that the orders are placed with the proviso, 'as wanted.' This lets the big railroads out, and the orders may not be asked for for several years. With some concerns business is up to the average for a presidential year, but the tariff problem and the uncertain presidential outlook are factors that must be reckoned with in the rubber industry, and many firms are not doing the business of last year."

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The Thermoid Rubber Co. is one of the plants to operate day and night, this being necessary by reason of the large number of orders on hand. This activity has been in evidence for the past month, and the force of operatives has recently been materially increased. While the Thermoid is doing a big business in auto

tires, the other branches of the business are rushed with orders. Daily shipments are being made to distant points in the United States and Canada, and even to South America and Australia. The Western business of the company has greatly increased during the past year. Aside from the manufacture of auto tires and brake linings, a general line of rubber goods is manufactured.

* * *

George E. Knowles, of this city, who for the past year was superintendent of a rubber manufacturing establishment in Jersey City, has accepted the superintendency of the plant of the Thermoid Rubber Company, this city.

* * *

John E. Broughton, a dominant factor in the affairs of the United and Globe Rubber Manufacturing Cos., is being urged to accept the Republican nomination for member of the lower House of the New Jersey Legislature from this section.

* * *

One of the many victims of the *Titanic* disaster was Washington A. Roebling, 2nd, son of Charles G. Roebling, director-general of the immense Roebling plants in this city. Washington Roebling was an officer of the Mercer Auto Co. and Mercer Auto Tire concern. He was returning to this country after a tour of inspection of auto tire and automobile factories in France, England and other parts of Europe.

* * *

General C. Edward Murray, treasurer of the Empire Rubber Co. and Crescent Belting and Packing Co., and acknowledged leader of the Republican party in this section of New Jersey, is a candidate for delegate to the National Republican convention from the Fourth Congressional District of New Jersey. General Murray favors the nomination of President Taft because of the President's advocacy of protective tariff measures. The general is immensely popular with the rank and file of the party, and for years past has aided many a Trentonian to better his position in life.

RUBBER BOOTS WITH LEATHER SOLES.

FOR many purposes and in many places there is nothing so good as a rubber boot. Those whose work compels them to walk through, or stand in water, appreciate the waterproof qualities of such footwear, and are free users of these goods. And this is, perhaps, the leading demand for rubber boots, an all-the-year-round demand, which totals far more than the spasmodic call that is caused by the snow storms of an average winter.

But leather boots have at least some advantages. The soles wear longer; they do not tear as easily, and they give the wearer a less slippery foothold. Therefore, if a boot could be made which would combine the waterproof qualities of rubber with the advantages of the durability and service of leather, it would certainly be found of value in many industries, and should meet with a large sale.

This was the problem, and it was solved in the simplest and most direct way by Fred F. Shafer, of the Goodyear India Rubber Glove Manufacturing Co., Naugatuck, who invented and patented the method, or process, under which the boots and shoes are made, which are known by the name of Rubberhide. The invention, briefly stated, is a rubber boot (or shoe) made as are regular goods, except that the sole is made much thinner and lighter, and extends beyond the body of the boot, thus practically forming a welt, to which the leather sole or soles are sewed, in precisely the same manner as a Goodyear welt shoe is made. It will be seen at once that such a boot will be as waterproof as any rubber boot, for neither the sole nor the upper is punctured in attaching the sole, and the sole will give the same wear as it would on a leather boot.

It is interesting to learn that, having accomplished the object desired, a difficulty at once presented itself in selling the goods. A boot made in this manner, and of the best materials, must naturally be high-priced, yet their principal market must be sought among wage-earners whose pay was small, such as the workers in mines, on concrete work, in digging and trenching. In fact, the boots could not be retailed at less than half a week's pay of the men who most needed them. The jobbers and retailers of footwear fought shy of such a proposition and President H. W. Child of the company found it necessary to institute a campaign of personal solicitation to interest the ultimate consumers, or those next to them, the storekeepers who sold exclusively to miners or laborers. In fact, the principal customers of the manufacturers are the keepers of "company stores" at the mines, contractors of engineering work, and municipal and national boards of public works.

And it is surprising (until one comes to think about it) that the miner, who works for two dollars a day, or less, will pay six dollars or more, for a pair of these boots. But this man has found that a pair of rubber boots are useless, and fit only for the junk heap, when the soles are worn through, while these soles give much longer wear, in the first place, and can then be re-soled and will then give a second, and often a third term of usefulness, and are thus more economical in the end.

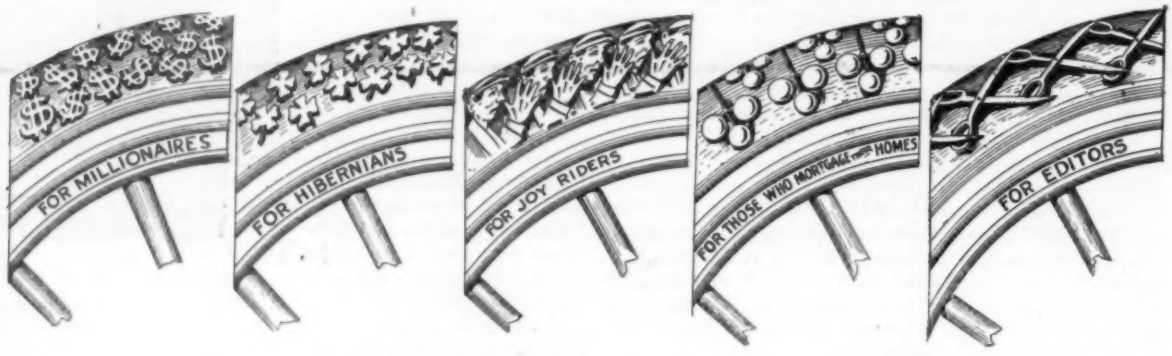
These are made in various styles; hip, storm-king and short boots, in all-duck, duck-vamp and dull gum, and in 7½ and 10-inch pacs in all-duck. A light boot with a heavy single sole is made especially for fishing and sporting purposes, which has proven quite popuplar.

One style of boots made has an edge of malleable iron around the heel and the forepart to give extra wear and protection, these rims being so constructed that they cannot be torn out or broken. These give extra wear and protection to the sole and heel.

That President Childs has been successful in securing a market for this combination of rubber and leather is shown by the wide extent of territory over which these boots are distributed. They are worn in the coal mines in Pennsylvania and the iron and copper mines of Michigan. They are called for by those working in the irrigation fields of the West. Many are worn in the work of the Panama Canal. Orders come from Mexico, Porto Rico, Peru, South Africa, Australia, New Zealand, and even from Rangoon and other Asiatic points.

OUR TIRE SUGGESTIONS BEARING FRUIT.

PRIMARILY it is the province of THE INDIA RUBBER WORLD to keep its readers well informed on all developments of importance in the great rubber industry. But if occasionally, incidentally, we can also add anything to the general joy of living, we are most happy to do so. Evidently we occasionally do.



SUGGESTIONS FOR TIRE TREADS FROM THE INDIA RUBBER WORLD, JULY, 1911.

Some months ago the editorial mind, having dwelt for a long time upon the many anti-skid devices exploited by manufacturers of tires, conceived a happy fancy, which was published in our issue of July, 1911, and is reproduced above in the five cuts, showing five different styles of anti-skid designs suited to people in different walks of life and various occupations. These designs were published without any ulterior motive, but simply to inject a little brightness into the general drab scheme of life. We did not expect to hear from them again. But evidently this midsummer phantasy was like the poet's song as described by Longfellow, which is sent forth at random into space and afterwards found lodged in the heart of a friend, for our anti-skid suggestion lighted on appreciative soil and has already fructified. We reproduce below some anti-skid designs taken from the April 11 issue of that agreeable and witty publication called "Life." These suggestions are employed to illustrate a dissertation on the utility, or inutility, of prevailing anti-skid designs. They appear under the caption "Suggestions for Additional Distinctive All-Rubber Non-Skid Treads." Their parentage is obvious, for it will be noted at once that the dollar-sign tread and the pawnbroker tread are the direct progeny of our July offering, while the other designs may be classified as collateral issue.

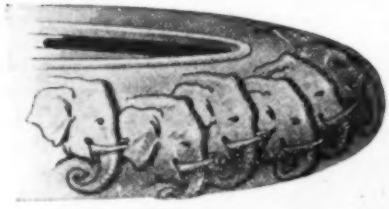
FOR THE CAPITALIST.

FOR THE ARTIST.

FOR THE PAWNBROKER.

FOR THE DRUGGIST.

FOR THE DEMOCRAT.



FOR THE REPUBLICAN.

FOR THE MUSICIAN.

FOR THE SPORTSMAN.

FOR THE ARCHITECT.

FOR THE LAWYER.

SUGGESTIONS FOR TIRE TREADS FROM "LIFE," APRIL 11, 1912.

Who knows but that this sprightly conceit of ours is the beginning of a new era in treads! Would it not be wonderful if it should revolutionize the entire tire industry?

It is announced that the rubber interests of Batavia, Java, are starting preparations for an international rubber exposition in that city during the first half of 1914, under the patronage of the Governor-General of that colony.

The German Material Testing Bureau.

WITH a staff of 72 trained scientists and 150 assistants, the Royal Material Testing Bureau, at Gross-Lichterfelde, near Berlin, affords an interesting example of the application of science to promoting the work of industry. Some of its features were referred to by THE INDIA RUBBER WORLD in the issue of January 1, 1912 (page 160), as well as on previous occasions.

The recently published report of the bureau deals with the year ended March 31, 1911, during which time much good work was accomplished. It is of interest to note that at the date of the report, there were prospects of still further progress during the year 1911-1912 (which has just closed), owing to the additional funds which the Jäger bequest had placed at the disposal of the bureau.

In the report the principal features of the mechanical and chemical tests of rubber are dealt with in a comprehensive manner.

MECHANICAL TESTS.

Reference is made to a case in which a compound of regenerated rubber had been claimed to contain 69 per cent. natural rubber, while the analysis showed only 40 per cent. It had been wrongly assumed that the substance of the rubber was unchanged by the process of regeneration, and that natural rubber and regenerated material were identical. The report adds:

"The bureau stands in exactly the same position as to regenerated as it does with regard to natural rubber. . . . Regenerated rubber should be tested for its mechanical strength. Comparative tests, the results of which would be expressed by figures, should be applied to compounds made with and without regenerated rubber. . . . These would demonstrate whether, and to what extent the regenerated material is in a position to fully replace natural rubber in rubber compounds. The bureau is quite ready to co-operate in such objective tests."

The testing of rubber and other insulating materials, which took place in 1909-1910, was continued in 1901-1911, and its scope considerably extended; the tests applied being more exacting, and the services of the bureau being called upon to an increased extent. From the current income of the bureau, it was found possible to increase the facilities for washing and vulcanizing crude rubber, and for preparing rubber compounds. By the courtesy of various manufacturing establishments, officials of the bureau were allowed to practically study at those plants the preparation of rubber compounds and other important manufacturing operations. Mechanical tests of rubber were continued and further elaborated with the machine of L. Schopper of Leipzig, as well as the Martens-Schopper machine. New machinery of this description has recently been exhibited, while other improved models are being studied by the above named firm.

Various inquiries and orders for testing were received as a result of the recent London Rubber Exhibition, and were largely due to the exhibit of testing apparatus by the bureau, in conjunction with the papers read on that occasion by Professors Hinrichsen and Memmler, and to the co-operation of other officials. As a result of negotiations with the Association of German Electricians, an extensive programme was prepared for exhaustive tests of insulating materials at voltages up to 500 volts. A number of factories co-operated in providing the apparatus for carrving out these tests; the object of which, amongst others, was to investigate the qualities of substitutes for hard rubber, and to define their utility as compared with that of genuine rubber products. With this view, tests were instituted as to their qualities, their strength and resistance under tension, pressure and flexion, as well as their hardness and capacity of withstanding chemical and climatic influences. The instructive results of these tests are now being compiled by a committee of the above-named association, with the object of drawing up normal regulations for insulating materials. It is added that there is reason to expect, that hard rubber substitutes will thus "come into their rights."

One of the principal features of the bureau's action has been the carrying out of agreed tests, as well as the adoption of uniform methods in selecting samples, that point not at present usually receiving the attention it deserves.

CHEMICAL TESTS.

A prominent fact in connection with the chemical section, was the increased extent to which its services were called upon by the rubber industry. In this connection mention is made of the work by Professors Hinrichsen and Memmler on "Rubber and Its Testing," which has met with general commendation from the technical press. Another interesting event was the reading by Professor Hinrichsen, at the 1910 Munich Congress of the German Chemists' Association, of a paper upon "Physical-Chemical Rubber Studies," in which he dealt with various investigations made at the bureau as to the molecular dimensions of rubber, the theory of processes of vulcanization and other subjects. Professor Hinrichsen in collaboration with Professor J. Marcusson likewise dealt with "The Determination of Filling Materials in Rubber Compounds." "The Optical Action of the Resins Present in Rubber" also formed the subject of investigation and report by these two experts, while other points treated by the former included "The Tetrabromide Definition of Rubber," and "Resin in Rubber."

The relative importance of rubber in the work of the bureau is illustrated by the fact that in division 5 (general chemistry) the 1,071 tests made during the year 1910-1911 included 282 of iron and steel, 216 of rubber in various forms, 191 of fuel, and 382 in 15 other branches.

The administrative policy of the establishment is prominently expressed in the following statement:

"The bureau would be much pleased, if this annual report gave rise to practical suggestions as to how the usefulness of the establishment to German industry could be continually increased. Every suggestion will be conscientiously weighed."

GERMAN OFFICIAL TESTS OF BALLOON FABRICS.

ONE of the most interesting portions of the report of the Gross-Lichterfelde Material Testing Bureau for the year 1910-1911 is that dealing with the tests of balloon fabrics. For this purpose the rupture apparatus of Gradenwitz was installed, as well as another (designed by Martens), for automatically recording pressure, the latter permitting rupture tests of samples measuring 1/3, 1/4, 1/8, and 1/16 of a square yard.

These appliances have been supplemented by one designed by E. Heyn, for determining permeability to gas, and likewise one designed by O. Bauer for ascertaining permeability to the radiation of heat. The necessary appliances for determining the kind of fiber, the strength of the fabric, and its resistance to the effects of weather, sunlight and damp, had already been installed in the textile division, so that the bureau claims to be in a position to test balloon fabrics in every manner required.

Communications actively carried on with leading representatives of aviation, led to the elaboration of a plan for a comprehensive series of tests of balloon fabrics, so that the properties of new materials could be clearly shown. It is also con-

templated, by means of tests made of fabrics, which have been long in use, to define the changes produced in them by age under the influences of weather, and under the mechanical strains to which they have been subjected during flight and in landing.

One large firm availed itself freely of the facilities thus afforded by the bureau, upon the occasion of its being in litigation with another firm, respecting the delivery of a balloon covering. It was important to prove to what extent the fabric had suffered from long storage and through having been packed several times.

It is of interest to note that the Gross-Lichterfelde bureau is keeping fully abreast of the progress of modern science in its latest development.

NEW TESTS OF RUBBER.

AT the recent Berlin meeting of the Prussian Association for the Promotion of Industry, interesting addresses were delivered by Professor Memmler and Professor Hinrichsen, both of the Royal Material Testing Bureau, Gross-Lichterfelde. While the former dealt with the standard mechanical rubber tests, the latter treated the subject of recent investigations as to the chemistry of rubber.

With regard to artificial rubber, he expressed the opinion that such material progress had been made that there was no longer any reason to doubt the technical practicability of rubber synthesis.

Dealing with the subject of the chemical testing of rubber, Professor Hinrichsen alluded to the understanding which had been arrived at between the Royal Material Testing Bureau and the United Manufacturers of Insulated Wire. According to this agreement, the only organic filling substance permitted is ceresine, to the maximum extent of 3 per cent.; but no rubber substitutes. This arrangement, it would seem, was mainly due to the opinion that there does not exist at present any sufficiently reliable method of defining the proportion of rubber substitute in rubber.

In the ensuing discussion Dr. Frank urged that the addition of rubber substitute was of importance for the properties of cables. He quoted the instance of a cable covering examined by him which had been laid in 1888, and is today in excellent condition, though containing 28 per cent. of rubber substitute. In addition he expressed the opinion that cables laid in accordance with the new rules would not prove satisfactory and recommended investigations for the purpose of finding a new method of determining the proportion of substitute. At the same time he did not consider that the present method of making this test was so inexact as had been represented. Doubts were, moreover, expressed whether the cable manufacturers for the want of a suitable method of analysis would give up the use of technically valuable rubber substitutes.

TO PROTECT THE TRIGGER FINGER.

The accompanying cut shows a pad of rubber intended to go around the finger of the man with the gun. The oval-shaped patch is, in fact, a small air cushion which is intended to go over that part of the finger that pulls the trigger. If the trigger is particularly hard to pull and a man goes gunning all day, he is very likely, if he is only an occasional sportsman, to blister his finger. This little air cushion in the finger protector is intended to obviate this trouble. This protector is made by S. W. Silver & Co., London, England.

RUBBER FINGER PROTECTOR.

ASBESTOS FABRICS.

THE enterprise displayed by the textile industry in its quest for raw materials, is exemplified by the fact that German textile experts see a great future for asbestos in that industry. It has been stated by antiquaries that the textile qualities of asbestos were known to primitive nations, the bodies of their illustrious dead having been wrapped in fabrics woven from asbestos fibers. The use of the material in garments was moreover known to the old American people. It was, however, reserved for modern times to develop its application to the textile industry.

For various reasons, asbestos is particularly suited for use as a textile material. In the first place, it is perfectly incombustible, moreover it is a poor conductor of heat, and finally it deadens the waves of sound. It is by no means a difficult task for modern preparing and spinning machines to spin the fibers after they have been dissolved; while among other uses of asbestos is the manufacture of carpets, which can be safely laid in front of an open fireplace, without risk of fire being caused by glowing cinders or pieces of wood. Asbestos takes dye excellently, the colors thus produced equaling those of wool carpets.

Asbestos garments are prominent in various industries, all workers in foundries and steel plants wearing asbestos aprons, in order to protect their bodies from the radiation of metals at white heat. Firemen in nearly all countries use asbestos gloves, helmets and protective apparel, while asbestos ropes constitute one of the most valuable appliances in fire department equipment.

Still another field is afforded by theatrical art for the use of asbestos, with a view to eliminating danger from fire, all kinds of scenery, backgrounds and curtains being composed of that material.

As pointed out in "Der Posamentierer," weaving asbestos in colors is a new form of textile industry, particularly by its being woven in conjunction with the collodion filaments used in artificial silk. In this way very effective designs can be produced out of the two materials combined as warp and weft. When the fabric is woven it passes through a singeing machine. By reason of the inflammability of the surface of the figured collodion portion of the fabric, the singeing brings out the latter with distinctness, while the incombustible asbestos portions are not affected by the flame, and thus produce any desired lace or similar effect.

A CHART OF VALUABLE RUBBER INFORMATION.

L. & W. Van de Velde, Antwerp, have recently issued an exceedingly convenient chart, which in compact form gives a great deal of rubber information. It shows the fluctuations of three grades of rubber—fine Pará, plantation, and African—for the last 20 years, giving the value of these three rubbers in francs per kilo and in shillings and pence per pound during that whole period. In addition the chart contains a table showing the world's production of these three classes of rubber for the entire 20 years, and the consumption in Europe and the United States, and the total world's consumption of fine Pará, and of all other sorts of rubber. It also gives the importations of rubber during this period into the various European ports and into the United States.

Jointly with this chart L. & W. Van de Velde have sent out a handsome engraving as a souvenir of the fiftieth anniversary of the founding of their house. The design, which is highly decorative, shows among other features portraits of the four most prominent members connected with the house at present and in the past, together with a view of their building in Antwerp and a rubber plantation scene.

WENT DOWN WITH THE "TITANIC."

OUR usual letter covering the india-rubber trade in Great Britain, which has appeared so regularly in our pages for many years, is omitted in this number because of the fact that it is at the bottom of the Atlantic, together with all the other mail—many tons in volume—that went down with the *Titanic*.

GERMAN VIEW OF THE SITUATION.

IN dealing with the situation of the rubber trade, at the recent general meeting of the Continental Caoutchouc and Gutta Percha Co., of Hanover, Kommerzienrat Siegmund Seligman reported the present condition of business as good, notable activity having characterized the operations of 1912. Indications, moreover, point to there being no lack of occupation in the immediate future, prospects for a later period being equally favorable.

At the same time he called attention to the fact that crude rubber prices were 10-15 per cent. higher than at the beginning of the year. He added:

> "This is a by no means unimportant advance, for which we have so far not been able to make up in our selling prices. Whether it will be possible to establish an increase is today hard to say. . . . On the whole, the prospects are of such a nature that we believe we shall be able to report a satisfactory result for the current year."

Commenting upon the recent movement in rubber prices, the "Gummi-Zeitung" quotes as an illustration the following London quotations for fine hard Pará:

July 17, 1911	4*s.* 4½*d.*
December 29, 1911	4*s.* 2½*d.*
March 13, 1912	4*s.* 9¼*d.*
March 26, 1912	5*s.* 2 *d.*

While prices have since receded to some extent, the editorial remarks on the situation as it stood at the end of March are still none the less of interest:

> "Thus prices of fine Pará have again exceeded the 5 shilling limit, and medium sorts have risen in proportion. The result is a general disturbance in rubber manufacture and trading. . . . Is this the beginning of another advance? . . .
>
> "On the other hand, the situation is so strained that it will be unavoidable, sooner or later, to advance selling prices, from reasons which are apparent to everyone. . . . The present position of the rubber industry cannot, therefore, be regarded as generally favorable. Even if dealers and manufacturers are busy, there will not be a feeling of encouragement until a proportion exists between current prices of goods and the advancing quotations for raw material."

According to various reports, some advances have been made in their lists by German manufacturers, particularly in the form of the upward revision of prices, where special depression had existed. In bottle disks, for instance, an advance has been made by some factories equalling about 3 cents per pound. This and other advances, however, only constitute a reaction from the recent low level of prices.

While bottle disks do not of themselves constitute a very important article, they are peculiarly sensitive to the fluctuations of the crude rubber market, having been described as a seismograph indicating coming movements.

"CONTINENTAL" OF HANOVER FORTY YEARS OLD.

The Continental Caoutchouc and Gutta Percha Co., of Hanover, has been celebrating its fortieth anniversary, having been founded on October 8, 1871. During its first years it experienced many difficulties, which at one time seriously threatened its continuance. Its victory has been ascribed to the new force acquired through the accession of Herr Adolf Prinzhorn in 1875, and of Herr Siegmund Seligmann in 1876; both still members of the board.

One of the principles steadily adhered to by the company has been that of placing in good years large sums to reserve account, and making liberal allowances in valuing assets in any way of a doubtful character. As a result of this cautious policy some of the claims previously valued on a conservative basis, have turned out better than expected and have realized a surplus beyond the valuations. The declaration of a 45 per cent. dividend at the recent meeting is the best proof of the successful methods pursued by the company.

THE NEW DIRECTOR OF THE BRUSSELS BOTANIC GARDENS.

M. H. Durand, the late director of the State Botanic Gardens, Brussels, was a botanist whose detailed work was much appreciated. It is to him that is due the *Index Generum* or "Index of Species," in general use by botanic gardens and botanical collections, as well as a comprehensive treatise on African *flora*.

His fellow-worker, Dr. Emile De Wildemann, has been named by the Belgian government as his successor, this appointment having given much satisfaction in technical circles. His earliest work was in connection with the *algae* of Belgium and Switzerland, and subsequently with reference to the botanical features of the Dutch Indies, the study to which his attention was specially directed being that of the tropical *flora*. Dealing with the large quantity of materials, concentrated in Brussels by the missions, which were traversing the Congo in all directions, Dr. De Wildemann devoted himself specially to the determination of the various species of African *flora*, in which studies he collaborated with the late M. Durand. Amongst the numerous works he published was a treatise in 1903 on the lactiferous *Apocynaceae* of the Congo. Another work of his was "Extensively Grown Tropical Plants," which has passed through two editions.

Holding the diploma of Doctor in Natural Science, and being a remarkable linguist, he has maintained close relations with botanic gardens all over the world, and has frequently taken part in scientific congresses. He has likewise been a regular contributor to French rubber journals.

At last year's London International Rubber Congress, Dr. De Wildemann read a paper upon "African Rubber Vines: Their Cultivation and Working."

"TO BURST WITH A SICKENING THUD."

AT least six days in every week, some discovery is made in the way of new rubber or rubber substitutes, that is going to play havoc—not only with the rubber plantations, but with the old original forests along the Amazon. A Western paper lately published the following news item from Grand Junction, Colorado:

"The rubber plantation boom is likely to burst with a sickening thud if the discovery made by T. E. Bailey, a ranchman near here, pans out as he expects. Bailey has discovered a mountain of what is believed to be mineral rubber. The mineral possesses all the qualities of rubber, and there are millions of tons of it.

"The rubber mountain is ten miles northwest of Grand Valley. The mineral is black, very hard and very dense. It is without grain or layer and is susceptible of a high polish. It is a non-conductor of electricity and has other properties of hard rubber. It has much the appearance of the rubber used in combs and similar articles."

Notwithstanding Mr. Bailey and his mountain of rubber, the probability is that Fine Up-River Pará will still command somewhat over $1 per pound, and the old-established plantations in the Far East continue to yield their shareholders handsome returns.

RUBBER AND AVIATION IN FRANCE.

By René Bobet.

THE numerous applications of rubber to aviation include four main classes of products, very different in character:

I. Wheels with pneumatic tires;
II. Rubbered fabrics for the wings;
III. Mechanism for breaking falls;
IV. Aviation equipment.

Each of these branches will be considered separately.

PNEUMATIC TIRES.

All the wheels used on aeroplanes have pneumatic tires. The wheels consist of a metal rim, of an air chamber with valve, and of a tire; being constructed with bicycle or motorcycle axles and metallic spokes, so as not to increase the weight. The tires are sometimes made with wires and sometimes in the clincher style; being cemented on by hand.

When aviation started, people were satisfied to use bicycle wheels. Today the types of wheel employed are very numerous, varying in each instance; it being thus rather difficult to give a complete list. Aeroplanes are seen with wheels from 10 to 28 inches in diameter, and from 1⅜ inch to 3½ and even 6 inches in thickness. Over 20 separate sizes are formed by combinations of these dimensions. Owing to the fact that the clincher tire, while suitable for motorcycles or for automobiles, is perhaps a little heavy for aeroplanes, many constructors of the latter prefer to use tires with rods. The latter have the advantage of being lighter, and moreover the weight and resistance can be very easily varied by altering the number of layers of fabric and the thickness of the rubber, while combining the various dimensions.

There is a tendency to eliminate small pneumatic tires, 1⅜ to 1½ inch thick of the bicycle type, which are really too small and are being replaced by pneumatic tires of 2, 2½ and 3½ inches, mounted on wheels of 20, 26 and 28 inches in diameter. Most aeroplanes have two wheels in front and one behind. Some have four in front on same axle; two at each side.

RUBBERED FABRICS.

The wings of aeroplanes are covered with fabric possessing extreme resistance. Some constructors are satisfied with using varnished or oiled fabrics or even ordinary materials, but most frequently rubbered fabrics are used. These fabrics ought to be very light and yet very strong, being, moreover, waterproof, so that in case of rain the aeroplane would not be weighted; the rubbering being on one side or both sides. It is effected by the rubbering machine or spreader; the fabric receiving several layers of Pará solution, so as to ensure very regular application.

The following table illustrates some fabrics:

Designation of fabric.	Width, inches.	Weight, sq. yd., in ozs.	Resistance in ozs. per sq. yd.
Ordinary cotton fabric.....	42	4	29¾
Light cotton fabric.....	47	3¼	24
Very light cotton fabric....	47	3¼	13½
Silk fabric	35	3¼	32¾
Linen fabric	51	4¾	42
Heavy linen fabric.....	42	5⅜	52½

Aeroplane wings fitted with rubbered fabrics present more security than those with ordinary fabrics, being on that account destined to be more and more used by aviators.

FALL-BREAKING APPLIANCES.

Aeroplanes are usually provided with landing cars in combination with fall-breaking systems in such a way as to protect the aviator and the mechanism against concussions of too violent a character. These fall-breaking appliances are most frequently composed of threads of first quality rubber, grouped together and covered with a lace-work of cotton. The extremities are fitted into attachments so constructed as to be fixed to the aeroplane. These attachments are made in various lengths from 10 to 20 or 30 inches and in diameters from 3/5 inch to 1⅗ inch.

Of course, these fall-breaking appliances vary according to the construction of the aeroplane and the mode of landing contemplated. They consequently vary according to its weight and should be designed for resisting considerable strains.

Instead of employing a number of threads of rubber grouped together (of uniform diameter) rubber cords of various diameters, for instance, from ⅗ to ⅘ inch can be used. Some fall-breaking appliances have the form of a bracelet or ring, composed of braided threads of rubber, with a lacing of cotton underneath.

Still another type of fall-breakers is constructed, composed of rings of first quality rubber, grey or red, very elastic and full of nerve, placed flat above the axle and fixed on two points attached to the landing mechanism. The rings are usually 4 to 5 inches internal diameter, and 5 to 6 inches external diameter, with a thickness of 4/5 to 1⅗ inch. Three rings are placed three or more on each side, beside each other.

It would seem as if fall-breakers of various kinds are destined to be more and more employed, their usefulness being incontestable. Suitably placed they deaden concussions of all kinds, both horizontal and vertical, thus permitting landing in very easy conditions.

For this purpose the use of rubber is the natural course, it being very elastic and possessing marked properties of resistance. It is, moreover, so light that it will always be preferred to metallic springs, for mechanisms intended to diminish concussions.

AVIATION EQUIPMENT.

Among the numerous objects composing the aviator's equipment may be cited the rubber "combination," of black, grey or brown vulcanized rubber, a garment in one piece and therefore inconvenient for putting on and taking off. A similar costume but in two pieces, consists of blouse and pants, the whole being of vulcanized rubber in various colors. The aviator is often provided with an elastic belt, composed of a band in two parts, united by a fastening, to which are attached elastic cords fixed to the leather straps, adjustable as desired, attached to the aeroplane. This belt makes the aviator of one piece with his seat. He cannot be thrown out, while, by reason of the elasticity of the belt, the concussion in the event of accident is considerably deadened. The fastening is easily removed when the aviator desires to leave the aeroplane.

Aviation, in fact, presents numerous uses for rubber and the manufacturers who will take the necessary steps to furnish really practical specialties for that purpose, will find satisfactory outlets in this new industry.

NEW FRENCH RUBBER COMPANY.

With a capital equalling $250,000, a company is being incorporated in Paris, under the style of the "Manufacture de Caoutchouc—Etablissements Edeline." The company will continue the operation of the Edeline plant, located at Puteaux, Seine. It is expected to maintain and develop the old connections of that influential firm, the new organization being considered likely to occupy an important position in the French rubber industry.

The company has been organized by M. Gustave Bouquillon, who lately resigned his position as consulting engineer of the Société Industrielle des Telephones. He will bring to his new post the fruit of his long experience, as well as new processes for the manufacture of automobile tires, which are regarded as ensuring the immediate success of the new company.

FRENCH MANUFACTURERS AND RUBBER DUTIES.

THE rejection of the proposal to levy a duty of 1 franc per kilo (about 9 cents per pound), on crude rubber, except on that from French colonies and protectorates reported in THE INDIA RUBBER WORLD of April 1, page 336), has given much satisfaction to the French rubber industry.

In commenting retrospectively upon the proposed measure, M. G. Lamy-Torrilhon, president of the Syndical Chamber of Rubber Manufacturers, refers to the general principle of fiscal legislation, according to which all raw materials intended for use in national industries are exempted from import duties. To renounce this fundamental principle, he remarks, would be launching into the unknown. From the point of view of the enormous injuries which might result to certain industries, and the disturbance which might be caused in the economic situation of the country, the consequences of such a measure might be irreparable.

According to recent statistics, he adds, rubber manufacture is one of the most important branches of French industry, representing a yearly output exceeding $40,000,000. It constitutes the support of 30,000 workers and their families; or, including its accessory branches, at least 50,000 hands. It is pertinently urged that the development of the industry would be arrested by a duty on rubber, just at a time when it is being daily taken up for new purposes.

Out of an aggregate yearly product of about 93,000 tons for the entire world, that of the French colonies is estimated at less than 7,000 tons. France, it is stated, annually consumes altogether 16 to 17,000 tons of crude rubber, of which quantity the French colonies furnish less than 3,000 tons.

Not only in quantity, but also in quality, is the French colonial product (principally consisting of vine rubbers, such as *Landolphia Heudelotii* or *Owariensis*) to a great extent unsuitable as a substitute for South American *Hevea Brasiliensis, Castilloa, Manihot,* etc. One-half of the French consumption of rubber is said to consist of genuine Pará. The coefficient of duty (or *ad valorem* equivalent) would necessarily be higher on inferior grades which show a much heavier shrinkage than better qualities; a specific duty being of course levied on the impurities present, as well as upon the rubber contents. At present prices the duty would have represented about 10 per cent. on Pará, and 25 per cent. on Borneo rubber.

Another point referred to is the possibility of the reprisals which would have followed the adoption of the measure. While not specifically mentioned, it is evident that the fear of jeopardizing the important commercial relations between France and Brazil, had an important share in the action of the French administration.

In his concluding words, M. Lamy-Torrilhon takes the position that there are simple and easy ways of promoting the cultivation of rubber in the French colonies, on the lines adopted by England and Holland in the Far East, without the aid of a duty. To use his own words:

"We ask nothing better than the promotion in any way of rubber cultivation in our colonies, but any measure adopted must not ruin an industry, which is energetically struggling against the invasion of foreign products. This would not only discourage it, but would oblige it for certain articles to seek a refuge with a nation where raw materials are free from duty."

The concluding sentence evidently refers to the contingency of manufacturing outside of France, principally for the export trade. The drawback provisions of the bill are characterized as illusory and troublesome of application, particularly in cases where regenerated rubber forms a component of a manufactured product.

It is stated that the rejection of the obnoxious measure was largely due to the protests of leading manufacturers and importers, who waited upon Viscount de Villebois Mareuil, the "reporter" of the Customs Commission. The representations made were so effective that the commission expressed unanimous disapproval of the proposed legislation.

The text of the bill follows:

TEXT OF REJECTED FRENCH BILL.

1. Crude rubbers, the produce of forests or plantations, situated in foreign countries, will be subjected, on their entering France, to a customs or consumption duty of 1 franc per kilogram (about 9 cents per pound).

2. Manufactured objects from foreign countries, and containing a certain quantity of manufactured rubber, will be subjected, on entering France, to a duty in proportion to the quantity of rubber they contain at the rate of 1 franc per kilogram (about 9 cents per pound) of crude rubber.

3. Crude rubbers from forests or plantations situated in the French colonies or in French protectorates, will be exempt from all duties on entering France.

4. French manufactured products intended for export will profit on leaving France, by a drawback calculated according to the quantity of crude rubber they contain.

The drawback will be proportionate to:

1. The weight of the crude rubber contained in these products.

2. A coefficient variable every year and which will depend upon the proportion existing between the crude rubbers imported into France from French colonies and protectorates and the total quantity of crude rubbers imported into France during the preceding year.

FUSION OF FRENCH RUBBER FACTORIES.

At the recent extraordinary general meeting of the Etablissements Bergougnan, of Clermont-Ferrand, France, the absorption of the Société des Etablissements Torrilhon, of the same city, was unanimously voted. In order to carry this proposal into effect, the capital of the first-named company is being increased from the equivalent of $2,600,000 to the parity of $2,800,000.

Other fusions of important French rubber companies have been reported as contemplated, but do not seem to have as yet assumed definite shape.

AMERICAN, ENGLISH AND GERMAN RUBBER CONSUMPTION.

IN view of the growing importance of the European markets for the distribution of rubber, the statistical value of their recorded imports requires to be considered with relation to their exports, in order to arrive at their net consumption. In the subjoined table are shown the three results, grouped in such a way as to show the net consumption of America, England and Germany for the calendar years 1910 and 1911. Duplication of quantities is thus avoided.

The proportions of re-exports to imports in 1911 were (approximately): United States, 7 per cent.; England, 60 per cent.; Germany, 25 per cent.

AMERICAN, ENGLISH AND GERMAN CRUDE RUBBER STATISTICS FOR CALENDAR YEARS 1910 AND 1911.

	Imports.		Re-exports.		Consumption.	
	1910.	1911.	1910.	1911.	1910.	1911.
United States ..... *pounds*	90,139,232	82,921,465	6,158,694	5,651,575	83,980,538	77,269,890
England	98,220,528	101,491,624	52,401,664	63,804,384	45,818,864	37,687,240
Germany	41,151,660	43,885,160	10,459,460	10,266,520	30,692,200	33,618,640
Totals ..... *pounds*	229,511,420	228,298,249	69,019,818	79,722,479	160,491,602	148,575,770

JAPANESE INCREASED CRUDE RUBBER IMPORTS.

JAPANESE imports of crude rubber and gutta-percha for May, 1911 (as shown in the India Rubber World of September 1, 1911, page 474), amounted to 54,493 pounds, value $45,514. The impetus given to the Japanese rubber industry by the operation of the increased tariff on manufactures (which went into effect July 17, 1911), is proved by the import returns for January, 1912, showing a quantity of 84,630 pounds, with a value of $62,951.

A comparison of the two months gives the following results as to sources of Japanese supply:

JAPANESE IMPORTS OF CRUDE RUBBER AND GUTTA-PERCHA.

	May, 1911.		January, 1912.	
	Pounds.	Value.	Pounds.	Value.
Straits Settlements.....	18,346	$9,716	52,312	$29,655
Dutch India.....	6,893	4,513	7,237	3,865
British India.....	7,240	4,125	Not Specified.	
Great Britain.....	6,590	8,868	6,846	7,482
United States.....	15,424	18,292	5,773	6,408
Germany	.....	.....	2,259	2,432
Other Countries.....	.....	.....	10,203	13,109
	54,493	$45,514	84,630	$62,951

The salient points of this return are the threefold increase of Japanese imports from Malaya, coupled with a falling off to the extent of about two-thirds in those from the United States.

As the average price of the former in January, 1912, was about 56 cents and that of the latter nearly double that rate it is evident that Japanese manufacturers are using increased quantities of a lower class of rubber than was the case in May, 1911.

THE RUBBER INDUSTRY IN JAPAN.

By Our Regular Correspondent.

EFFECTS OF THE NEW JAPANESE TARIFF.

ALTHOUGH, on account of the differences in classifications, it is frequently impossible to exactly compare the rates of the old and new Japanese tariffs, where such a comparison is possible, the effects of the new measure, which went into effect July 17, 1911, are visible. Thus in May, 1911, the imports of bicycle tires represented $20,849; this amount being almost cut in half in January, 1912. Comparing the sources of supply the following results are obtained:

	May, 1911.		January, 1912.	
	Pounds.	Value.	Pounds.	Value.
Great Britain.....	15,506	$18,251	6,009	$10,353
France	253	215	....	.....
United States.....	1,033	2,383	110	292
Total	16,792	$20,849	6,119	$10,645

ASIA RUBBER COMPANY, LIMITED, TOKYO.

This stock company was established at Tokyo in December, 1911, for the purpose of manufacturing and selling rubber goods, with a capital of $50,000, of which one-fourth is already paid in. It is contemplated to give attention at first to the selling department of the business situated at Tokyo, pending the construction of the factory elsewhere, which is expected to be completed by the end of the year. Mr. Masao Watanabe is managing director.

TEIKOKU RUBBER CO., LIMITED, TOKYO.

This company, established in February last, purchased the Teikoku Rubber Works, which had already been built at Kameido, Tokyo; the capital amounting to $75,000, of which one-fourth is paid in. Its chief products will be rubber soles and rubber materials for toy balloons.

YOKOHAMA ELECTRIC WIRE CO., LIMITED.

On February 18 a serious fire took place at the plant of the above company, destroying the finishing, tubing, stranding and painting shops, the damage representing about $100,000. This important concern (of which the India Rubber World published an illustrated description in its February issue), will probably rebuild upon an enlarged scale.

VISIT OF MR. ERNEST E. BUCKLETON.

Mr. Ernest E. Buckleton, managing director of the North-Western Rubber Co., Limited, of U. S. A., Liverpool, arrived in Yokohama from San Francisco on February 26, per steamer *Tanba-maru*, proceeding to Kobe on February 28, and afterwards returning to Tokyo. Mr. Buckleton's visit is for the purpose of developing trade with the largest Japanese factories, in the reclaimed rubber produced by his company.

FERTILIZERS IN RUBBER CULTIVATION.

EXPERIENCE has proved the necessity of a certain amount of fertilization, as a condition of successfully cultivating rubber trees in tropical climates, this being particularly the case with *Hevea*. This fact has commenced to interest tropical planters, more especially those of the Federated Malay States, Ceylon and the Dutch Indies, who are trying to derive advantage from the more or less exact data now available on the subject.

As pointed out by a writer in "Le Caoutchouc et La Gutta-Percha," it has become more and more evident that certain chemical products exercise a favorable influence, not only upon the development of rubber vegetation, but also upon the yield of latex. On this point, preliminary experiments made in British India have proved that the application of nitrate of soda increases the flow of latex and the proportion of rubber produced.

In the course of experiments at Hawaii (Keanoe) with *Manihot* trees, to which Chilian nitrate had been applied at a depth of 4 inches, those to which ¼ pound had been applied gave from 1 to 3 ounces of rubber, while those with which ½ pound had been used yielded from 2 to 3 ounces. The action of the fertilizer was noticeable after 48 hours.

As to *Castilloa*, European theoretical experiments have demonstrated the probable value for the purpose in question of salts of lime and potash and of azoted compounds. The opinion has, however, been expressed that the use of potassic fertilizers encourages the development of vegetable parasites; this subsidiary question needing consideration. Lime, it is added, seems to be at present justly attracting the particular attention of planters in the East.

While the results obtained in the Federated Malay States by the use of lime are of interest, they are not, it is believed, of universal application. Where it is impossible to procure a sufficiency of lime at an advantageous price, it is considered questionable whether the attempt to cultivate *Hevea* is advisable.

The soils in the English Asiatic possessions are generally deficient in lime, phosphates and potash, but often contain quantities of azote, particularly in situations formerly covered with virgin forests.

Based on the above facts, there follows an interesting disquisition of the action of fertilizers on turfy, argillaceous and sandy soils; concluding with the following remarks:

"There are consequently arguments for and against the use of fertilizers, either in the form of chemicals, or as a vegetable covering. It is for the planter, after studying the different methods of cultivation, to ascertain for himself, in each particular case what kind of fertilizing is advisable. . . . The question is a very complex one and does not admit of a solution applicable to all cases."

Some Notes on Rubber Planting.

TWO HUNDRED AND FIFTY PER CENT. DIVIDEND.

ONE of the briefest and most concise annual reports issued of late by plantation companies, is that of the Pataling Rubber Estates Syndicate, Limited, presented at its ninth annual general meeting on March 21, last. With a paid-up capital equaling $112,500, the company produced in 1911 rubber to the value of about $419,000; thus turning over its capital almost four times within a year, and making a net profit of about $288,000.

Under this fortunate combination of circumstances the company was able to pay three interim dividends, each of 50 per cent. and in addition a final dividend of 100 per cent. This result is due to the fact that the production of 333,044 pounds cost f. o. b. at Port Swettenham 11½*d*. (23.31 cents) per pound, or including English charges 1*s*. 7.24*d*. (39.02 cents); while the average gross price realized was 5*s*. 0.14*d*. ($1.2189).

This company owns 2,206 acres in Selangor, Federated Malay States, of which 1,467 acres are planted. It was incorporated in 1903; plantings following successively until 1908. The first yield was in 1907 of 58,064 pounds, which allowed of paying 35 per cent.; production and dividends increasing until 325 per cent. was reached in 1910. For 1911 there has been a slightly higher yield than in 1910, but the cost of production has advanced, so the dividend is only the modest one of 250 per cent.

ANGLO-MALAY RUBBER COMPANY, LIMITED.

According to the report presented at the London meeting of April 24, the 1911 crop of rubber amounted to 780,972 pounds sold at an average gross price of 5*s*. 2.54*d*. ($1.2670) per pound. The cost, including all London charges, was 1*s*. 8½*d*. (41.56 cents). The total dividend paid for 1911 was 70 per cent. For 1912 the crop is estimated at 900,000 pounds.

GOLDEN HOPE RUBBER ESTATE, LIMITED.

The annual report of the above company presented at the London meeting of April 2, recorded a production of 109,555 pounds, costing, including London charges, 1*s*. 8.91*d*. (42.23 cents), and realizing a gross average of 5*s*. 0.43*d*. ($1.2229). The dividend upon a paid-up capital equaling $220,000 was 30 per cent. Sales of rubber in 1911 aggregated about $140,000. It is estimated that the new year's crop will amount to 150,000 pounds.

LAC INDUSTRY FOR CEYLON.

Lac is a resinous substance, produced by a species of scale insect which lives on the tender branches of certain trees, of which they suck the juice and secrete the resin. In harvesting lac, the branches with resinous incrustations are removed from the trees, the resin being scraped off and graded for export in the form of lac, or shellac, for which there is a large industrial demand.

The systematic cultivation of lac was begun in India comparatively recently, and it is now proposed to extend the system to Ceylon. A paper on the subject was lately read at the Ceylon Board of Agriculture.

MOTOR CARS FOR THE MALAY STATES.

Contrary to the experience of almost every country, the Federated Malay States have been able to carry out their development work without borrowing. Not only are the States free from debt, but they have constructed roads and railways, waterworks and other public works out of revenue, and have built up a reserve fund largely in excess of expenditure. In fact, the finances of the country are in such a healthy condition that the Federation is advancing to Siam the sum of £4,000,000 in order that a railway may be constructed through her Eastern States and thus form a link between Siamese and Malayan territory.

As the "Financial News" remarks, no country possesses a better road system. The mileage at the end of 1909 was 1,875 metalled roads, 225½ unmetalled and 1,477 miles of bridle roads. These roads have a splendid surface, and, consequently, motoring and motor traction are carried on extensively throughout the interior. Motor-car manufacturers in search of fresh fields would find promising territory in the Malay States.

BALATA IN FRENCH GUIANA.

It is stated by officials of that colony that the balata industry should be one of the most important in French Guiana. Balata is produced in three different districts—namely, Mana, Maroni and Iracouba. There is no export duty, and concessions are granted freely to French citizens of good financial standing—the limitations being that no one man shall receive over 25,000 hectares, which is the equivalent of 61,775 acres. There is a fee of 5 centimes (one cent)—per hectare, with a minimum of 250 francs ($50). The balata of this colony is reported to be of the best quality—but the great drawback has been in this industry—as in all agricultural activities in French Guiana—the difficulty of securing economical labor.

RUBBER OUTLOOK IN PHILIPPINES.

Mr. A. W. Prautch, an authority on rubber planting in the Philippines, recently contributed a valuable article on this subject to "The Cable News," published in Manila. He goes into considerable detail, taking up the question of climate and rainfall, soil, and cost of starting and maintaining a plantation. His concluding paragraph under the caption, "Will Pará Grow Here," is as follows:

"There have been enough experiments in growing Pará rubber in the Philippines to warrant the conclusion that it will succeed here. The Basilan Plantation Company have some hundreds of Pará trees in bearing. They have made two shipments of rubber to Hamburg, Germany; the following is an extract from the report on this rubber: 'The sheets were thin, medium colored, transparent, and of very good quality. It has good nerve and is well prepared. Such rubber will always find a good sale here.' Mr. Thos. D. Aitken visited the Baco River plantation in northern Mindoro; he found a Pará nursery in which the seeds were planted four years ago and left. The outer trees that got light and air measure 16 inches to 22 inches in circumference, three feet from the ground. Some twenty other persons have planted rubber, and the experiments are satisfactory as far as they have gone."

"A MERE DROP IN THE BUCKET."

The daily press when it discourses on rubber is always interesting—if not always instructive. "The Globe" of New York recently had an editorial on the prospect of lower prices for the consumer of tires in which this statement appears:

"Rubber plantations have sprung up all over the world in tropical regions suitable for the rubber tree. Within a few years the cultivated product is likely to form a very considerable percentage of the total supply. At present, of course, it is a mere drop in the bucket."

Considering the fact that plantation rubber produced during 1911 amounted to 14,200 tons, or practically one-sixth of the entire production of crude rubber from all sources, to refer to it as "a mere drop in the bucket," seems rather slighting, even for a care-free and jocund daily. Six of these drops would completely fill the bucket.

NOTES FROM BRITISH GUIANA.

By Our Regular Correspondent.

THE EXPORT DUTY ON BALATA—A SUCCESSFUL AGITATION.

THE annual meeting of the Legislature is now at an end and its most momentous feature, so far as those interested in the balata and rubber industry is concerned, is the abolition of the export tax on balata, together with the rejection of the proposal that all forest produce should be subject to a similar impost. This happy culmination has only been secured by vigorous agitation and untiring opposition. It will be recollected that in answer to the charge that the tax was an invidious one the acting governor wrote a minute to the effect that all forest produce should be laid under a similar tribute.

It was a tactical mistake in the first place to impose an export tax instead of increasing the royalty, for this course placed the critics of the proposal in an unassailable position, and the government in a position where defence was almost impossible. The second mistake, and perhaps it was of even greater magnitude was the suggestion that the export duty should be applied to other forest produce. Such a course did little to remove the charges of discrimination, whilst it greatly increased the volume of opposition. The publication by the acting governor of his famous minute was followed by a series of interviews in the daily newspapers with the leading representatives of the balata and other forest industries, which foretold a sharp conflict if the government pressed its proposal to a division in the Legislature. These gentlemen had little difficulty in demonstrating that they were already handsome contributors to the revenue, and that the export tax was more than the industries were able to support; that it was invidious and unsound; and that the government was pursuing a policy that was not likely to be favorable to the fortunes of the colony. They had a large measure of public opinion with them, and received the cordial support of both daily newspapers in their attitude.

THE LEGISLATION'S DECISION.

The Combined Court went into Committee of Ways and Means on February 25. The acting government secretary, in introducing the budget, pointed out that on account of the industrial stagnation created by the drought he anticipated that revenue during the forthcoming financial year would fall short of the expenditure that had been approved by $42,000, and if the balata tax was abolished his deficit would be $66,000. A majority of the committee was sufficiently impressed by the arguments in support of the abolition of the tax to approve of a motion that it should be removed, but only after a lengthy debate in the course of which much opposition was made to the proposal. The motion for abolition came from C. P. Gaskin, who is interested in the industry. Mr. C. F. Wieting, a Water street merchant, said that the industry was growing and it was a question whether it should not contribute to the revenue. Mr. Russel Garnett, local attorney of Curtis, Campbell & Co., said that the company's failure to make profits was due to mismanagement by the men sent out here by the companies, and it was a mistake to ascribe it to the export tax. He agreed, however, that an export tax was wrong, and if the court was in favor of taking it off he would agree, on the understanding that a tax would be imposed in some form next year. He thought the industry would not be overtaxed if it were made to pay 4 cents royalty instead of 2 cents. Mr. Dias, a "people's" representative, charged the government with weakness in allowing itself to be led by the agitation carried on against the tax in London. Dr. Rohlehr said that the industry was paying handsomely and could bear the tax. Mr. Russel Garnett then moved as an amendment that the export tax be abolished and that the royalty should be increased to 4 cents, the addition to be utilized for the benefit of the industry. This was lost on a division by 14 votes to 6, and the motion for the abolition of the tax was carried with only two dissentients.

THE CONTINUATION OF THE DROUGHT—WORK SUSPENDED.

The drought continues with unabated severity and the effect on the industrial situation is becoming most serious. Its effect upon the balata industry may be gathered from the fact that the exports to March 28 were only 23,010 pounds, as compared with 72,533 pounds in 1911. The total rainfall has only been 2.41 for the year as compared with 20.33 for last year. We are assured by those experienced in these matters that the rains are some weeks off yet. News has reached us that the conditions in Surinam are infinitely worse than they are here. Operations have been completely suspended in the "bush," and Paramaribo, the capital town, is full of "out-of-works." The government even has to despatch special trains into the interior in order to supplement the water supply. Descriptions of the scenes at the arrival of the trains are graphic and distressing. Although things are not so bad here, conditions are very bad. Very few expeditions are being despatched and those that are report the greatest difficulty in reaching their destinations. An idea may be gleaned of the severity of the drought if I add that gold-diggers are working some of the beds of the rivers for gold.

The reports from the interior are now serious, and navigation is difficult from Rockstone onwards, the point where most of the balata expeditions proceed, and from Tumatumari—which is now about four days' distant instead of about 12 hours as normally—it is impossible. Bush is burning freely on the river banks, and it will be interesting, when work does commence again, to ascertain if the balata tracts have been affected thereby. Most of the companies have been advancing to their laborers, but, nevertheless, there is much distress and the Government has appointed a committee with wide powers to devise relief works for those who are in need and who want work.

THE BALATA INDUSTRY AND THE RESOURCES OF CIVILIZATION.

In the Combined Court Dr. Rohlehr asked an interesting question which elicited much useful information. He asked for a report showing the number of laborers registered for the gold, diamond, balata and timber industries of the colony; who is responsible for their medico-surgical care; how many have died within the last 5 years; how many succumbed while on the way to the hospitals in Georgetown, New Amsterdam or Suddie; what were the reported causes of death, and what were the qualifications of those persons who furnished the death certificates? The acting government secretary said that there were 7,118 registrations of balata laborers, that in the Northwest district there were hospitals at Morawhanna and Arakaka, with a medical officer and a dispenser in charge respectively; for the Cuyuni, Mazaruni and Puruni District a hospital at Bartica, in charge of a medical officer; for the Potaro District a cottage hospital; for the Demerara River District a dispenser; for the Pomeroon and Moruca Districts a medical magistrate, and three dispensers; for the Berbice River District a dispenser. No information could be given regarding the number of deaths within five years either on the grants or in transit. Death certificates need not be produced when a death was registered. The registration was made by the government medical officer when the man died in hospital; by a registered medical practitioner if so attended and by a relative or friend when not so attended, and the probable cause of death given.

APPOINTMENT OF A GOVERNOR—A RAILWAY BUILDER.

Sir Walter Egerton, Governor of Southern Nigeria, has been appointed governor of this colony to succeed Sir Frederic Hodgson. Sir Walter Egerton has had a very brilliant career in the Colonial Civil Service, and his regime in Southern Nigeria has been remarkable for the manner in which he has developed the railway system of that tropical country. As I have said before, if the *hinterland* of this colony is to be developed a railway is required, and Sir Walter Egerton seems to be the man to build it

if the local Legislature which controls the "money bags" will let him. He will, in all likelihood, have the cordial support of the Secretary of State, who, in his despatch, stated: "His Majesty is pleased to approve of the appointment of Sir Walter Egerton, Governor of Southern Nigeria, to be Governor of British Guiana. I am glad that resolution recently passed by Combined Court with regard to emoluments of the office enabled me to recommend to His Majesty the King for this important post an officer whose administration has produced such striking results in developing the resources of Southern Nigeria.—Harcourt."

BOARD OF AGRICULTURE—INCREASED DEMAND FOR RUBBER SEEDS.

At a meeting of the Board of Agriculture, held on March 25, attention was drawn to the fact that the price of rubber plants for sale had been altered. The Director of Agriculture pointed out that this was necessary, as they had received orders for about 100,000 plants more than previously. Orders had been sent to the Straits Settlements for 150,000 Pará rubber seeds for the next five years; hitherto, they had been able to get 60,000 only. He pointed out the importance of knowing what trees they were getting the seeds from, as by importing casually they might get seeds from trees that gave excellent yields of seeds, but which did not yield rubber in great quantities. The department was going to select a system of testing packages of Pará rubber seeds to determine the rate of germination, etc., and getting the necessary certificates. This increased demand for plants betokens an increased interest in the culture of rubber. The Bartica Agricultural Estates, Ltd., for instance, now has a large acreage cleared ready for planting.

THE BARTICA AGRICULTURAL ESTATES—ARRIVAL OF A PARTY OF STOCKHOLDERS.

On April 1 Mr. Lindley Vinton, treasurer of the Bartica Agricultural Estates, Ltd., arrived in Georgetown from New York on the Q. L. S. *Parmia* with a party of seven stockholders. The party left for the estates on April 2, and returned on April 5. In an interview, Mr. Vinton stated that the company has ordered a complete plant for the preparing of sisal, which commodity is now ready for harvest. The machinery will be shipped from

EIGHTEEN-MONTHS-OLD HEVEA, "THE HILLS" B.G.

New York. They were going ahead with their rubber cultivation and would this year increase their rubber cultivation from 600 to 1,000 acres.

A MILLION ACRES OF PLANTATION RUBBER.

WHILE estimates affecting other parts of the world are necessarily more or less approximate, the figures available with regard to Asiatic rubber plantations are sufficiently exact to afford a basis of calculation.

In a recent issue the "Revue Internationale," after discussing the various items of which it is composed, put forward an estimate of the surface planted in Asia with rubber, of 826,541 acres.

By a detailed comparison of this estimate with the recent figures of Mr. D. Milton Figart, United States Vice-Consul General at Singapore (published by THE INDIA RUBBER WORLD, January 1, 1912, p. 161), the following results are shown:

ESTIMATED RUBBER ACREAGES, 1910.

	Revue Internationale.	Mr. Figart.
Malaya	362,853	362,853
Ceylon	238,822	241,885
Java	106,664	.....
Sumatra	80,000	.....
Netherlands India (Java & Sumatra)	.....	150,000
India and Burma	26,202	43,525
Borneo	12,000	.....
Cochin China	.....	11,000
Total	826,541	809,263

The first estimate, while higher than others which have recently appeared, is considered by the writer of the article to fall short of the exact conditions.

With regard to Africa, it is added that the cultivation of rubber is extending, there being in the German East and West African colonies and in the French colonies several thousand hectares (of 2.47 acres) planted with *Funtumia, Ceara* and *Hevea* part of the trees being in a productive condition.

In Mexico there are, it is stated, 100,000 acres planted in rubber. The acreage in British Guiana is stated to be 1,700 acres, of which 1,000 are in *Hevea* alone. In Dutch Guiana there are said to be 800 acres in *Hevea Brasiliensis*, 17 plantations being engaged in the cultivation of this variety. Trinidad and Tobago have, it is added, 2,300 acres under cultivation, planted with about 85 per cent. of *Castilloa*, 11 per cent. *Hevea*, and 4 per cent. of *Funtumia*.

Taking as a basis the French estimate for Asia quoted above, and adding to it the figures given for the other parts of the world, the result would be approximately as follows:

	Acres.
Asia	826,541
Africa (say)	10,000
Mexico, etc. (say)	100,000
British Guiana	1,700
Dutch Guiana	800
Trinidad and Tobago	2,300
Total	941,341

These figures applying to 1910 and being, moreover, avowedly incomplete, it is evident that by allowing for 1911 even a normal amount of new planting, the "million acres in plantation rubber" which has been spoken of has possibly been already exceeded.

In its concluding sentence the article thus deals with the general question of plantation vs. wild rubber:

"Plantations may therefore seriously compete with the production of wild rubber; but the contest, while becoming keen, is not destined to cause wild rubber to disappear, if its production is rationally conducted, if the methods of extraction correspond with the physiology of the trees, and if . . . replanting takes place under conditions of natural vegetation."

The Rubber Goods Manufacturing Co.'s Annual Report.

AT the thirteenth annual meeting of the stockholders of the Rubber Goods Manufacturing Co., held at its office in Jersey City, New Jersey, April 11, 1912, the president submitted the following report:

The net sales for the year ending December 31, 1911, were $34,587,269.15 as compared with sales of the previous year of $35,188,295.40, showing a slight decrease. This is entirely accounted for by the lower selling prices prevailing the past year, as compared with the previous year, the quantity of goods sold being largely in excess.

There has been a falling off in sales of mechanical and miscellaneous goods, due to general business conditions. Especially is this true of goods sold to the railroads. On the other hand, the sales of automobile and other tires have greatly increased.

The profits are more satisfactory than in any year in the history of the company, being $3,500,997.23, as compared with 1910—$2,122,247.62, and 1909—$2,369,971.61, the profits of 1909 being up to that time the largest since the organization of the company.

The president in his last annual report referred to the organization of the United States Tire Co. and mentioned briefly the plan of marketing through that company the entire production manufactured at the Hartford, Morgan and Wright, G. & J. and Revere factories.

The United States Tire Co. was organized for the purpose on March 1, 1911; agencies have been established in many of the principal cities and large expenses have been involved while making the change, and it has taken the better part of last year in which to perfect these organizations. However, the policy has proven successful and great benefits should be derived therefrom in the future.

While the development of the United States Tire Co. has been going on, much progress has also been made in improving our factory organizations, operations and equipment. Extensive improvements and additions have also been made at several of our mechanical factories during the year.

The twenty-story building which is being erected by the United States Rubber Co. on the southeast corner of Broadway at Fifty-eighth street will be ready for occupancy by the United States Tire Co. within a short time. It has also been determined to transfer the offices of the Rubber Goods Manufacturing Co. and the General Rubber Co., as well as those of the United States Rubber Co. itself, to the new building. The locating of all of the principal offices of these companies in one building will unquestionably result in more efficient management of the business, as a whole.

Crude rubber prices declined during the first six months of 1911, the fluctuations being quite marked—fine Pará rubber selling in March at $1.68 per pound and in June at 94 cents per pound. The prices during the last six months of the year were fairly steady, and at the end of our fiscal year, December 31, 1911, the price of fine Pará was $1.04.

Respectfully submitted,

ELISHA S. WILLIAMS, *President.*

TREASURER'S REPORT.

(Of Rubber Goods Manufacturing Co. and Subsidiary Companies.)

CONSOLIDATED GENERAL BALANCE SHEET, DECEMBER 31, 1911.

ASSETS.

Property, Plants and Investments...		$26,602,908.44
Patents and Trademarks.....		1,570,577.89
Inventories, Mf'd Goods and Materials	$10,495,130.68	
Cash	2,043,593.70	
Bills and Accounts Receivable.....	6,915,644.60	
		19,454,368.98
Stock Owned in General Rubber Co.	1,666,700.00	
Securities Owned	383,450.00	
		2,050,150.00
Miscellaneous Assets		292,136.03
Total assets		$49,970,141.34

LIABILITIES.

Capital Stock; Preferred.....	$10,351,400.00	
Capital Stock, Common.....	16,941,700.00	
		$27,293,100.00
Bonds of Mechanical Rubber Co. and N. Y. Belting & Packing Co. (less amount owned).....	974,510.00	
Sinking Fund Cash in hands of Trustee	302,220.94	
		672,289.06
Reserve for Redemption of Bonds...		454,326.12
Bills and Accounts Payable.....		7,164,541.31
Accounts Payable to General Rubber Co.		3,591,355.13
Reserve for Federal Excise Tax.....		34,433.81
Fixed Surplus (Subsidiary Companies)		2,499,218.65
Surplus		8,260,877.26
Total liabilities		$49,970,141.34

Of the above "Assets" and "Surplus" $185,234.21 represents the ratable interest therein of minority stockholders in Subsidiary Companies of the Rubber Goods Manufacturing Company.

Contingent liabilities for certain guarantees, which are offset by corresponding contingent assets, are not included.

CONSOLIDATED SUMMARY OF INCOME AND PROFIT AND LOSS FOR YEAR ENDED DECEMBER 31, 1911.

(Of Rubber Goods Manufacturing Co. and Subsidiary Companies.)

Net Sales		$34,587,269.15
Earnings		3,607,895.87
Income from Investments.....		100,000.00
		$3,707,895.87
LESS:		
Expenses of Home Office.....		206,898.64
Net Profits		$3,500,997.23
*Dividends	$2,159,761.93	
Depreciation on Patents and Trademarks	46,543.43	
		2,206,305.36
		$1,294,691.87
Transferred from Reserves to Surplus.....		407,653.72
Surplus for the Period.....		$1,702,345.59
Surplus and Working Capital January 1, 1911....		6,558,531.67
Surplus and Working Capital December 31, 1911..		$8,260,877.26

Respectfully submitted,

EDWARD J. HATHORNE, *Treasurer.*

*Includes $79,827.93 paid minority interests in two Subsidiary Companies.

The same board of directors was re-elected, namely:

ANTHONY N. BRADY,	CHARLES A. HUNTER,
SAMUEL P. COLT,	ARTHUR L. KELLEY,
FRANK W. EDDY,	LESTER LELAND,
JAMES B. FORD,	HOMER E. SAWYER,
ERNEST HOPKINSON,	ELISHA S. WILLIAMS.

At the first meeting of the new board, held on April 12, the following officers were re-elected:

President.—ELISHA S. WILLIAMS.

Vice-Presidents.—LESTER LELAND and CHARLES A. HUNTER.

Treasurer.—E. J. HATHORNE.

Assistant Treasurer.—JOHN D. CARBERRY.

Secretary.—SAMUEL NORRIS.

Assistant Secretary.—JOHN D. CARBERRY.

Executive Committee.—Elisha S. Williams, Lester Leland, Anthony N. Brady, Samuel P. Colt, Ernest Hopkinson, Charles A. Hunter and Homer E. Sawyer.

The following record of the volume of net sales by the Rubber Goods Manufacturing Co. and its subsidiary companies for the past ten years is compiled from the company's annual reports:

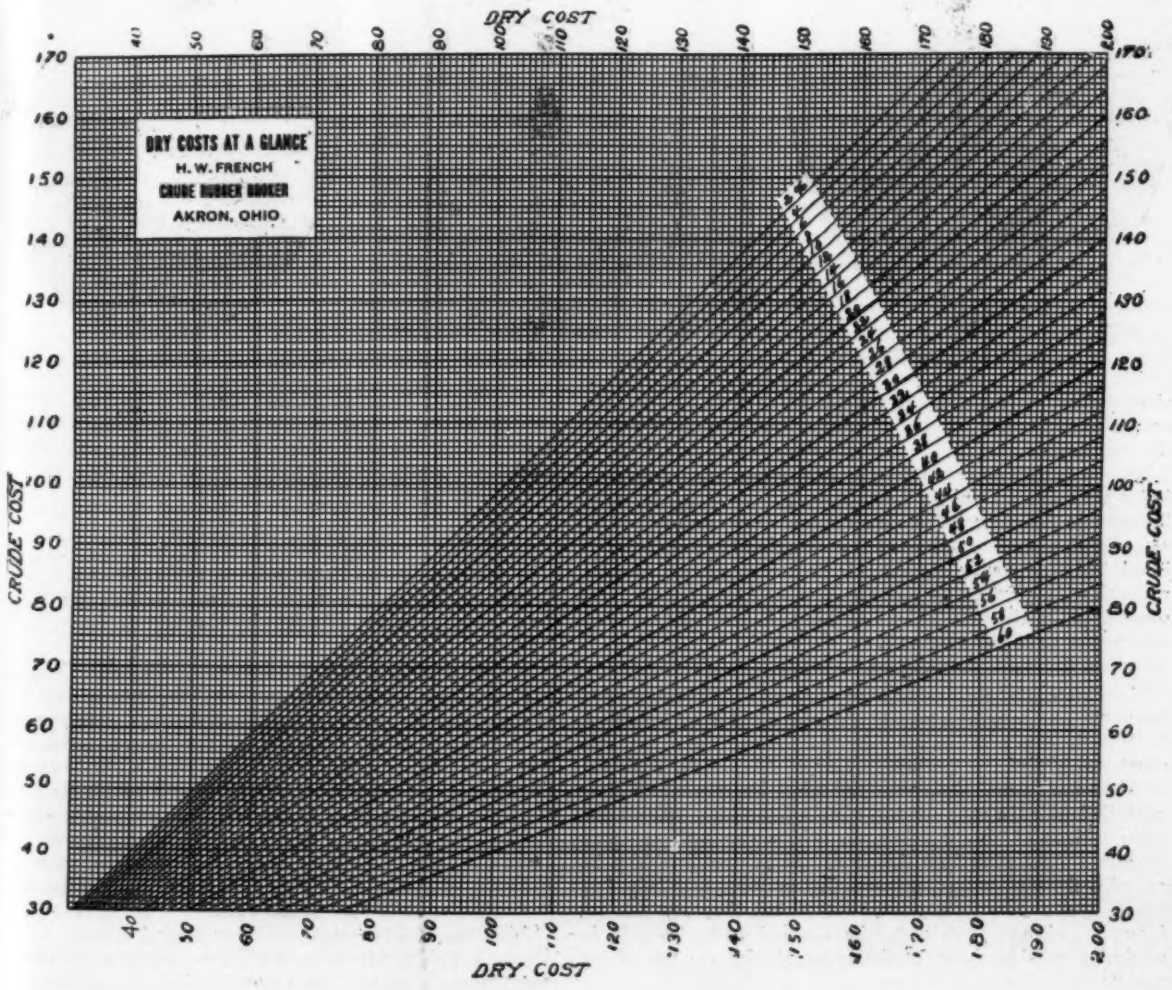
1902	$13,999,329.00	1907	$21,473,823.28
1903	14,310,752.00	1908	18,491,987.90
1904	14,556,289.00	1909	25,629,592.71
1905	17,662,453.00	1910	35,188,295.40
1906	19,737,120.81	1911	34,587,269.15

OUR NATIONAL FINANCIAL GROWTH.

THE Statistical Abstract issued annually by the Department of Commerce and Labor through its Bureau of Statistics, the thirty-fourth number of which has just made its appearance, shows that the money in circulation has increased from $12 per capita in 1850 to $34 per capita in 1911; the bank clearings, from 52 billion dollars in 1887, the first year for which an official record was available, to 159 billions in 1911; the individual deposits in banks, from 2 billion dollars in 1875, the earliest year for which figures are available, to practically 16 billions in 1911; the number of depositors in savings banks, from 1 million in 1866, to 9½ millions in 1911; the exports of domestic products, from a little over 100 million dollars in 1840 to over 2,000 millions in 1911; and the value of manufactures produced in the country, from 1 billion dollars in 1850 to 20½ billions in 1910.

DRY COSTS AT A GLANCE.

With a view to simplifying calculations of the dry cost of rubber at varying percentages of shrinkage, Mr. H. W. French, crude rubber broker, of Akron, has issued a chart based on the principle of intersecting lines. It includes 30 various percentages, applied to crude costs, from 30 cents to $1.70, and giving the equivalent in dry costs, ranging from 40 cents to $2. The table is ingenious and would apparently shorten such calculations, always a desideratum in these busy days. The chart is herewith reproduced on a somewhat reduced scale.



Obituary Record.

LEONARD J. LOMASNEY.

LEONARD J. LOMASNEY, first vice-president and sales manager of the Republic Rubber Co., Youngstown, Ohio, died at his home in that city on April 9. His funeral was held on Friday afternoon, April 12.

Mr. Lomasney was born in June, 1870, in Nashville, Tennessee. He became identified with the rubber trade in 1896, when he took the position of traveling salesman in the South with the Peerless Rubber Manufacturing Co., of New York city. Two years later, because of his marked ability, he was made sales manager of the mechanical department of the Peerless company, and in that position became intimately associated with the late Charles H. Dale. He remained with the Peerless company until 1904, when he joined the Republic Rubber Co. as sales manager and first vice-president, having the year previous married Miss Arms, the daughter of the late Werner Arms, at that time president of the company.

He was a man of very attractive personality and unremitting in his efforts to advance the interests of his company, and under his management the work of the sales department was carried on with signal success. During the last few months of his life his health had been greatly undermined; he had been confined to his room since last November and his death had been expected for some time. He is survived by a widow and three children—two sons and a daughter.

THOMAS MCILROY, JR.

LEONARD J. LOMASNEY.

A LAWRENCE ROTCH.

PROFESSOR A. L. ROTCH.

The members of the Rubber Club of America, who were present at the Aeronautic Symposium, held by the club on December 13, 1909, in the rooms of the Algonquin Club, Boston, will remember very distinctly the first speaker of the evening, Professor A. Lawrence Rotch, of the Meteorological Department of Harvard College. He gave an exceedingly interesting talk on the various kinds of kites and balloons which he used, to carry recording instruments into the upper atmosphere, by which he recorded the temperature, pressure and currents to a height of ten or twelve miles. He pointed out at that time how this information, when put in tabulated form, would result eventually in producing reliable charts of the upper air for the use of the aeronaut.

Those who were present on that occasion will regret to hear of Professor Rotch's death, which occurred on April 8, in Boston, after an operation for appendicitis. Professor Rotch was 51 years old. He was a graduate of the Institute of Technology, but had been connected with Harvard for a number of years. He founded and directed, up to the time of his death, the famous Blue Hill Observatory. He was the first one in this country to take atmospheric observations several miles above the earth by means of instruments attached to kites and balloons. He was a member of many scientific societies, and many foreign orders of distinction had been conferred upon him. He was a member of an old Milton family and the son of Benjamin S. Rotch. He left a wife and three children.

Under the provisions of Professor Rotch's will, the Blue Hill Meteorological Observatory, its equipment, and all the buildings connected with it, will become the property of Harvard University. Professor Rotch also bequeathed to the university $50,000, the income of which is to be used for the maintenance of the observatory.

THOMAS McILROY, JR.

T. McIlroy, Jr., for forty years a well-known figure in rubber circles in this country and Europe, died in San Antonio, Texas, April 6, and was buried in Oakwoods Cemetery, Chicago, April 11.

Mr. McIlroy was born in Brampton, Ontario, Canada, on July 23, 1854. His parents moved to New York in 1863 and he was educated in the public schools of that city. He entered the employ of the Gutta Percha & Rubber Manufacturing Co. of New York when he was about 17 years of age. At 18 he was on the road for that company, introducing and selling their rubber fire hose. He later established a branch warehouse for that company in Toronto, Canada, and a few years later erected a large factory for the Gutta Percha & Rubber Manufacturing Co. at Parkdale, a suburb of Toronto. That factory later became one of the largest of its kind in the world.

After twenty-five years' continuous service with the Gutta Percha & Rubber Manufacturing Co. he organized his own company under the name of the Toronto Rubber Co., and built works

at Fort Dalhousie, a Canadian town near Niagara Falls. This factory manufactured rubber boots and shoes and a general line of mechanical rubber goods. Mr. McIlroy being offered what he considered a satisfactory price for his interest in the Toronto Rubber Co. sold out some fifteen years ago and became interested in the Gandy Belting Co. of Baltimore. Mr. McIlroy traveled throughout the entire world in the interests of that company, establishing selling agencies in Egypt, India, South Africa, China, Japan, Australia, the Philippine Islands and in all European cities.

Last year he spent several months in South America, but he was not in robust health, and the climate of that section was too severe for him. Upon his return to Baltimore last fall he was in a weakened condition; but, not withstanding his ill health, he insisted on going to Havana, Cuba, in January. He returned via New Orleans and was passing through San Antonio, with the intention of visiting Pacific Coast cities, when he was compelled to take a rest. He failed very rapidly. His wife, son and his brother Frank, president of The McIlroy Belting & Hose Co. of Chicago, Illinois, were with him when he died. He leaves a widow and three children.

WILLIAM H. FURBER.

William H. Furber, for many years connected with the Boston Belting Co., died at his home in Newton, Massachusetts, April 15, aged 84 years. Mr. Furber was born in Boston in 1828, and entered the employ of the Boston Belting Co. in 1852. In 1874, after serving for several years on the Board of Aldermen, he was elected Mayor of the city of Somerville. After several years in other lines of activity he returned to the Boston Belting Co., and after the reorganization of that corporation was for several years general manager and chief executive. Retiring from that position, he remained upon the board of directors, continuing to hold that office until his death. Of late years he had lived with his son, who, like his father, took an active interest in the affairs of his residential town and served the city of Newton as Mayor. Mr. Furber left a widow and a married daughter, besides the son, who bore the same name, mentioned above.

ALEXANDER STRAUSS.

The sudden death of Alexander Strauss occurred April 10, in the New York office of the Braender Rubber and Tire Co., Rutherford, New Jersey. He was engaged in dictating correspondence when he fell back in his chair dead.

Mr. Strauss had been connected with the rubber business for many years. He was employed as a salesman by the New York Belting and Packing Co. for about 15 years. By profession he was a mechanical engineer and was endowed with a strong inventive faculty. While with the New York Belting and Packing Co., he invented the Strauss tip tire and developed an emery wheel, which proved particularly efficient and was extensively sold. About 15 years ago he left the above company and became associated with the Goodyear Tire and Rubber Co. Later he entered the employ of the Braender Rubber and Tire Co., and continued in that position until the time of his death. He was 60 years old. He left a wife, three sons and two daughters.

WASHINGTON A. ROEBLING, 2nd.

Among the nearly 1,700 victims of the horrible *Titanic* disaster was Washington A. Roebling, 2nd, son of Charles G. Roebling, and grandson of John A. Roebling, who founded the firm of John A. Roebling Sons' Co., Trenton, New Jersey.

Washington A. Roebling 2nd was only 31 years of age, but he had already given promise of exceptional capacity. He possessed pronounced mechanical ability, and had given a great deal of attention to the development of motor engines. He associated himself with the Mercer Auto Co. and the Mercer Auto Tire Co., in both of which he was an officer. He was credited with the invention of an automobile engine of a new and valuable type. He had marked athletic tendencies and was famous as a golf and tennis player, and in his school days had an inter-scholastic reputation as a ball player. While naturally quiet and reserved, he had a most attractive personality, and was exceedingly popular in a wide circle of friends.

RUBBERIZED AUTO TOPS.

"THE HUB" discourses as follows on the construction of tops for automobiles and the necessity of rubberized material if the tops are to withstand all kinds of weather:

The materials used in top manufacture are cotton twill, mohair, leather and imitation leathers. The twill and mohair combinations are largely used for tops for cars larger than a demi-tonneau, while for high-grade runabouts and victorias leathers and imitation leathers are often used. The class of goods that sometimes finds its way into cheap tops is not waterproof, and, in the case of a heavy downpour or of exposure for any length of time in the rain, will permit the moisture to penetrate and leak through into the car.

The usual material employed is made of two layers of fabric cemented or vulcanized together with a rubber compound. This makes the two layers as solid as if of one piece and renders them waterproof. The rubbering or vulcanizing process is the most important. Upon the manner in which it is carried out, the amount of rubber used and the quality of the rubber, will depend its serviceability. The exterior and interior layers of fabric often differ in quality, and where mohair is employed the exterior layer is mohair while the backing is usually cotton twill. A cheaper class of material is plain twill, where two layers of the twill are vulcanized together.

The appearance of a top made of mohair is superior to that made of ordinary fabrics. It has a luster and is non-absorbent; consequently the rain runs off it easily. Mohair is goat hair, and is a good deal coarser than cotton; consequently the meshes of the weaving are larger than those found in cotton twill. There are several imitations of mohair which are in reality made from cotton, with a little silk added in the manufacture, to give the required luster. In these, the silk very soon wears off, leaving the material ragged. The mohair stratum is very thin and when seen in the unsolutioned state has the appearance of a thick veil. For this reason it is inclined to wear and fray if the slightest friction is allowed while the top is folded. Mohair requires very careful handling in the manufacture, and only the best quality of rubber solution should be used with it; otherwise it will become detached from the foundation and fray.

Gray is popular in top manufacture. It is composed of alternate strands of gray and black hair, but can be varied in many ways to give the requisite shade. The color of the material used is no indication of the quality, although if a special shade is desired that does not come through in the ordinary course of manufacture, it will probably cost more to have the material specially dyed.

Where a leather effect is desired a material known as auto leather is largely employed. It has the appearance of leather, but is in reality a composition that is mounted on suitable backing, either of cotton, wool or mohair. Cotton is often used, owing to the fine mesh and its ability to more readily absorb the waterproofing material. Any type of leather can be imitated nowadays, ranging from a delicate morocco to the ordinary hide variety. Sun, heat and damp are the enemies of this material, as it is liable to crack, in which case the rain will find an easy path through the cracks and in time it will rot the backing.

It is stated that the Society of Automobile Engineers has leased a suite of offices in the new United States Rubber Co. building at Broadway and Fifty-eighth street. It is expected that the building will be ready for occupancy by the middle of the summer.

EDITOR'S BOOK TABLE.

IN THE AMAZON JUNGLE. ADVENTURES IN REMOTE PARTS of the Upper Amazon River, including a sojourn among cannibal Indians. By Algot Lange. With an introduction by Frederick S. Dellenbaugh. With 86 illustrations from original photographs by the author. G. P. Putnam's Sons, New York and London. [Cloth, 8vo., Pp. 401.]

THE story, "In the Amazon Jungle," by that intrepid traveler, lecturer and writer, Algot Lange, although it has to do with scenes and characters in the heart of the rubber country along the tributaries of the upper Amazon, is not primarily a rubber story. It is rather a book of moving adventure; and while it will not add materially to a rubber man's technical stock of knowledge, it will afford him—as well as the general reader—many sensations and a succession of thrills.

The author begins with his landing in January, 1910, at a spot called Remate De Males (not to be found on many maps) at the confluence of the Itecoahy with the Javary river, some miles above the point where the Javary flows into the Marañon or upper Amazon. This little hamlet on the river banks is about a thousand miles above Manáos, so it will be appreciated at once that it is well into the rubber country. After many unusual experiences, the author gets an opportunity to continue about twenty days' journey up the Itecoahy to the *seringal* of a millionaire shipper of rubber. Here follow more remarkable experiences—among them the undoing of a 54-foot river boa-constrictor. After several months of *seringal* life full of exciting incidents, he joins a party of six *seringueros* on an expedition into the untracked jungle to discover virgin rubber trees. While this proves to be a successful expedition in the matter of locating trees, it ultimately results in a sad tragedy, as three of his six companions are summarily taken off by the swift fatalities common in that region—one by a deadly snake bite, one by swamp fever, and one by the dreaded beri-beri. The author, separated from his surviving companions, and reduced by fever and starvation to the last notch of vitality, creeps through the jungle on hands and knees, and finally falls unconscious on the edge of a little clearing, which proves to be the camp of a cannibal tribe. The weeks which he spends in the hospitable and kindly companionship of these cannibals comprise the most interesting chapters of his book. He describes their method of life, the ingenious traps they set for their enemies, their method of warfare, the variety of weapons they use, and the distinctly reprehensible manner in which they treat the enemy after he is vanquished and slain. Finally, through the generous offices of his cannibal hosts, he is returned to his friends at the *seringal*, where he seizes the first possible means to terminate his year's sojourn in the country of the Amazon.

The story is written in a direct and simple style, which makes the recital most convincing—even where it is altogether without precedent or parallel among the narrations of other explorers. It is a book that will appeal to all who enjoy, in print at least, strange adventures in far-off and unfamiliar lands. The seventeen-year-old boy will find life in the Quiet town high school rather drab and dull compared with this wonderful country where lizards grow four feet long, and supple warriors blow poisoned arrows through ten-foot reed guns with force enough to bring down the monsters of the jungle. He will probably chafe for some days after reading this story over the drear commonplaceness of his surroundings; but the author can't help that. He has set down the facts as they befell; and if many of them seem rather remarkable and others of them quite ridiculous, that's the reader's gain.

A consular report is authority for the statement that one Hawaiian rubber plantation will have 40,000 trees tappable at the end of 1912. It is expected to secure 6,000 pounds of rubber during this year. From 23,000 trees recently tapped 1,200 pounds of dry rubber were secured, the first shipments to New York realizing $1.01 per pound for the best.

NEW TRADE PUBLICATIONS.

THE B. F. Goodrich Co., Akron, Ohio, has recently sent out a little folder of 8 pages descriptive of the new Master Tread tire made by this company, which in the words of the folder is "the last word in non-skid tires." This tire is not intended in any way to supersede the popular Goodrich-Bailey, but is rather in addition to that tire, to please people who may want something different. The distinguishing feature of the "Master Tread" is its general ruggedness. The shape and arrangement of the projecting studs on this tire suggest a chain of thick, heavy rubber buttons running in a straight line along the top of the tread and in zigzag lines along the edge, so as to oppose varying angles of rubber against any side-slipping movement.

The Goodyear Tire and Rubber Co., Toronto, Canada, sends out a booklet of 32 pages, entitled "Rubber Belting," which is the first of a series to be issued by this company covering all the lines of mechanical rubber goods which the company manufactures.

In our April number we had a paragraph describing three very handsome catalogues issued by the Boston Woven Hose and Rubber Co., Cambridge, Massachusetts. These three books, one describing belting, the second mats and matting, and the third fruit jar rings, were of uniform size and similar in character, but all distinct in design. They were all alike, however, in this—that they were exceptionally fine specimens of catalogue making. We have just received two more catalogues belonging to the same series and equally handsome in cover design and in the treatment of text. One is entitled "The Hose Book," and the other "Brass Fittings." Both have covers of handsome mottled effect with decorative designs, the hose book cover being printed in two shades of green, black and gold, while the other cover is printed in brown, a light blue, black and gold. The hose book contains 48 pages, printed in black and green on a light green tint. It is generously illustrated, showing a birds-eye view of the factory, a number of interior views, agricultural, mining, construction and dredging scenes where hose is having practical application, and in addition it contains many fine half-tones of sections of the hose made by the company, which covers practically every variety, from hose ¼ inch in diameter for gas and sprays to 30-inch hose for dredge and excavating work. The brass fittings book contains 32 pages, printed in black and yellow on a stock of yellowish tint, and describes, with many illustrations, couplings for garden hose, mill hose, suction, steam and fire hose, beside spray nozzles and lawn sprinklers.

The Springfield Rubber Co., Springfield, Massachusetts, which, early in March distributed a very attractive catalogue of rubber clothing, has lately followed that by an equally attractive and somewhat larger catalogue descriptive of rubber footwear. This booklet consists of 64 pages with an artistic cover, and shows by a large number of handsome half-tones the variety of footwear carried by this concern, consisting chiefly of the Boston and Woonsocket brands—both of which, it will be noticed, have recently taken on new trade mark emblems—the Boston showing a hub trade mark, and the Woonsocket having as a trade mark the head of an elephant, and being called the "Elephant Brand."

The J. P. Devine Co., Buffalo, New York, has recently issued a catalogue of 40 pages descriptive of its vacuum drying, evaporating and impregnating apparatus. This company has made over 2,500 vacuum dryers for various materials and quite a number of these dryers are illustrated in this catalogue. The one, however, which will be of special interest to the rubber trade, is a vacuum drying chamber made of cast or wrought iron with surface condenser and vacuum pump, which is shown on page 12. This dryer consists of a chamber or cylinder which is closed hermetically at one or both ends by large doors. It contains a number of steam and water-tight heating shelves or pipes placed

one above the other through which steam or hot water is circulated to produce the required degree of heat. The material to be dried is placed on these shelves in trays made of suitable shape and material. This dryer is designed to remove moisture rapidly and at a low temperature from materials that are in any way sensitive to heat.

The Kelly-Springfield Tire Co., Akron, Ohio, has sent out a little 10-page folder entitled "Solomon's Shrewdness," which, in brief text and with a series of diverting illustrations, tells how the wise Solomon distinguished between a natural rose and an artificial one, using this anecdote as a text for a little advise on the best way to select a serviceable tire.

The Boss Rubber Co., a wholesale tire concern, of Denver, Colorado, has issued a catalogue of 32 pages entitled, "Have Your Motoring Appendix Removed," which is designed to show that the way to remove all tire trouble is to get one of the tires handled by this enterprising house. There is much other information in the little book.

A booklet entitled "Minor Repairs and the Care of Tires" just issued by The Firestone Tire and Rubber Co., Akron, Ohio, tells the most effective way for a motorist to make repairs on his tires and inner tubes, and contains also a list of suggestions on the care and preservation of tires in order to get the utmost service from them. This booklet will be sent free upon request.

The General Bakelite Co., 100 William street, New York, has recently issued a booklet of 44 pages, entitled "Bakelite, Information No. 2." As its name implies, its mission is to give information regarding Bakelite. This is not merely a mixture or a so-called compound like many rubber or resinous compositions, but is a well-defined chemical substance of specific properties. In the formation of Bakelite two strong smelling liquid substances, carbolic acid and formaldehyde, are used, but they react chemically upon each other and solidify into a transparent, amber-like substance which is entirely devoid of odor and taste. The book describes in considerable detail the properties and uses of Bakelite in its various forms.

INDIA-RUBBER GOODS IN COMMERCE.

EXPORTS FROM THE UNITED STATES.

OFFICIAL statement of values of exports of manufactures of india-rubber and gutta percha for the month of February, 1912, and for the first eight months of five fiscal years, beginning July 1:

MONTHS.	Belting, Packing and Hose.	Boots and Shoes.	All Other Rubber.	TOTAL.
February, 1912.....	$193,699	$62,689	$652,434	$908,822
July-January	1,297,422	1,076,492	3,987,743	6,361,657
Total, 1911-12.....	$1,491,121	$1,139,181	$4,640,177	$7,270,479
Total, 1910-11.....	1,354,060	1,699,371	3,899,406	6,952,837
Total, 1909-10.....	1,233,910	1,437,252	3,053,753	5,724,915
Total, 1908-09.....	896,362	1,013,544	2,454,707	4,364,613
Total, 1907-08.....	924,585	1,305,352	2,485,307	4,715,244

The above heading "All Other Rubber," for the month of February, 1912, and for the first eight months of two fiscal years, beginning July 1, includes the following details relating to tires:

MONTHS.	For Automobiles.	All Other.	TOTAL.
February, 1912.....	$267,036	$57,912	$324,948
July-January	1,374,337	291,460	1,665,797
Total, 1911-12.....	$1,641,373	$349,372	$1,990,745
Total, 1910-11.....	1,194,720	368,029	1,562,749

RUBBER GOWNS FOR SYMMETRICAL LADIES.

A recent issue of a New York evening paper contained a two-column story, generously illustrated, highly entertaining and undoubtedly veracious in some of its details, regarding a social leader from Chicago who was clad in a rubber gown of wonderful hues, but chiefly noticeable because it followed her every movement so religiously.

A lady reporter followed the society leader to her stopping place and further investigated this remarkable garment, describing it with more than the usual lady-reportorial genius.

"It seemed to me there had been no room left, even for improvement. Shimmering bands of pale yellow elastic formed the bodice of Mrs. Von Nisson's gown. They caught the light in different places as she breathed. They made faint, protesting sounds as she moved, like the strings of a violin drawn tight. At her ankles her train widened into a glistening circle about her feet."

Just how much fine upriver Pará there was in this lady's garment cannot be definitely stated, but viewed as a broad sartorial proposition, why should not the ladies wear rubber gowns? They certainly would be vastly more comfortable than the hobble creations in which so many of them have lately appeared. A rubber gown with a reasonable amount of elasticity would certainly render it much more possible for women to navigate the sidewalks and to mount the steps of a street car, than the gowns so many of them now affect, which render walking difficult and awkward and mounting steps impossible. Then again, it would render the wearer immune to passing showers, and if to it were added a rubber hat with rubber ribbons and rubber plumes, even the equinoctial storms would become unconsidered trifles.

SOME SPRING ADVICE FOR TIRE USERS

It is announced that the membership of the Service Bureau of the United States Tire Co., has reached the 18,000 mark. The latest bulletin sent to these members in the line of spring suggestions contains among other items of tire advice, the following timely recommendations:

Before finishing the tuning up of a car for the coming season take the casings off and examine the rims. If they are rusty scrape and paint them. Don't put the casings back until the rims are absolutely true and free from dents. Sprinkle soapstone into the casings before replacing the tubes.

If the rear tires are worn get a new pair for the rear, and move the old casings to the front wheels where the service is easier.

Test the alignment of the axles. The easiest way is to measure between the felloes of the wheels or the edges of the rims at the point directly in front of the axle. If this measurement differs from the same measurement taken on the opposite side of the wheels, it shows the axles are out of alignment. This defect should be corrected immediately.

Get a good pressure gauge and use it regularly throughout the season.

If new accessories are added this spring, be sure they do not bring the weight of the car above the weight the tires are designed to carry. If in doubt about this matter be on the safe side and get larger size tires.

THE SOUTHLAND COMPANY'S MEXICAN PLANTATION.

The secretary of the Southland Rubber Co., of Spokane, Washington, recently received word regarding the operations on the company's plantation in the Palenque district, state of Chiapas, Mexico, to the effect that 100 of the 1,000 acres owned by the company at that place had been cleared up since the first of February last. It is the expectation of the company to clear the entire tract and plant it to rubber.

AN EDGE CEMENTING MACHINE.

The British United Shoe Machinery Co., Limited, of the Union Works, Leicester, England, are an amalgamation of the interests of Pearson & Bennin, Limited, The English & American Machinery Co., Limited, and the International Goodyear Shoe Machinery Co., U. S. A. They make a specialty of producing all the latest shoe and harness making machines, and we give herewith a cut of their No. 2 Edge Cementing machine. The machine known as No. 4 Edge Cementing machine has been considerably changed in design but its use is identical with that of the No. 2 machine and our further remarks refer equally to it and to No. 2.

The object is to apply the cement to the edges of all classes of folded work in a rapid and effective manner. The capacity of

EDGE CEMENTING MACHINE.

the machine is limited only to the ability of the operator, who does not need to be an expert. Compared with ordinary table work one girl with the machine can do three or four times the quantity, and with a contingent saving of about 50 per cent. of cement. This is largely effected by the supply being under the absolute control of the operator at all times, thus making it possible to apply exactly the amount required. A further saving as far as cement is concerned is due to the machine being virtually air tight, and when not working, the small strippers for the feed roll move forward and prevent evaporation by closing over it.

A POWER PUMP FOR TIRES.

The temptation to shirk the tedious and tiresome work of pumping up a tire by hand, and to travel on a "few pounds less," which is one of the prime causes of tire trouble and injury to tires, is born of the inefficient devices used for inflation. The automobilist may avoid the labor, without incurring the risk, by equipping his car with one of the many power tire pumps on the market, of which the Ten Eyck Pump, illustrated, is a type. Installed on the car, this machine is part of the power plant and always ready for service. The act of connecting the pump-hose with the tire, if there is any pressure at all in the latter, brings the piston wheel of the pump into contact with the flywheel of the engine and the pump begins to work automatically. As soon as the desired pressure is obtained, which can be read on the gauge, forming part of the device, the hose is detached from the tire valve, which automatically throws the pump out of contact. If the tire is entirely deflated, it is only necessary to touch the starting lever to throw the pump into contact, and the pressure keeps it there. All the pump requires is occasional lubrication and properly inflated tires are assured without labor. [Auburn Auto Pump Co., Forty-third street and Broadway, New York.]

A POWER TIRE PUMP.

GASKETS OF METAL AND RUBBER.

The McKim gasket is not particularly new. As a matter of fact it has been in use in one form or another for over 15 years; but it is interesting enough, by reason of its present vogue, to entitle it to a paragraph. The accompanying illustration gives a general idea of its construction. It is named after the inventor, Mr. McKim, who was a railroad engineer living in Denver some 17 or 18 years ago.

He conceived the idea that by putting a thin shell of copper around his rubber gaskets, he could keep his joints just as tight, and have the packing serve very much longer. That was the beginning of the McKim gasket. Its general construction remains the same today, namely, a thin metal cover around some elastic packing. The elastic packing serves to make the joint tight, and the metal cover serves to hold the packing together, and make it more durable. Where the gasket is required for low pressures and for cold water, the packing consists of rubber, but where extreme heat or high pressure is used, asbestos replaces the rubber. This packing is now used extensively by railroads and in power plants of all descriptions. [McCord Manufacturing Co., Detroit, Michigan.]

THE V. P. SHAFT SPEED COUNTER.

That "V. P." doesn't stand for vice-president, but rather for vest pocket, because this little counter can be carried around very conveniently in the vest pocket. It is only 3 inches long, but it is said to be thoroughly accurate. It is intended for use in determining the speed of shafts of engines, pulleys, etc. The tip, which is made of rubber to insure better contact, is applied to the center of arbor or shaft. It registers the exact number of revolutions and requires only the taking of the initial reading and the subtraction of that reading from the final reading to obtain the number of revolutions in any given time. [American Steam Gauge and Valve Manufacturing Co., Boston, Massachusetts.]

ACID-PROOF SHEETING.

So called acid-proof sheeting made of poor quality, like all other goods of poor quality, is quite unsatisfactory. The Dunlop No. 76 Red Acid-Proof Sheeting is subjected to a variety of tests that would seem to constitute conclusive proof of its acid-resisting qualities. Here are some of the tests: 10 per cent. carbolic solution 30 minutes; strong cold ammonia for the same length of time; 50 per cent. alcohol also for 30 minutes; and boiling soap and water for 10 minutes. Any rubber sheeting that can survive these tests successfully, ought certainly to be practical for ordinary use.

New Rubber Goods in the Market.

RUBBER DAYLIGHT BAGS IN PHOTOGRAPHY.

AN excellent contrivance for the photographer when desirous of changing plates to a developing tank or loading plates in a holder in the daytime, is a rubber bag made for the purpose. The bags come in sizes to fit cameras from 4 x 5 to 8 x 10. The plates, or whatever needs changing, are put into the bag, the opening being closed with glove fasteners. The heads are then inserted through side pockets or sleeves of the bag, which are safeguarded by elastic bands and the desired change of plates is made. These bags are made of the finest quality of black sateen, lined throughout with black rubber. [Burke & James, Inc., Chicago, Illinois.]

INGENTO DAYLIGHT BAG.

PNEUMATIC CRIB MATTRESS.

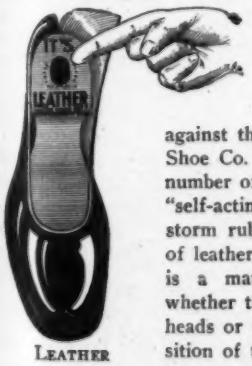
The illustrations show one of the new pneumatic crib mattresses, both inflated and deflated. When inflated it is soft, comfortable, never becomes matted, nor does it need turning. It can easily be cleaned with a sponge, does not wet through; and when it is wet, dries almost immediately. It is absolutely hygienic, as no germs can possibly get a place to hide in it. The mattress can be adjusted as to softness at any time very easily. When deflated and wrapped up it weighs only seven pounds. It can be had in two sizes, or made to order in any special size. [Pneumatic Manufacturing Co., Brooklyn, New York.]

CRIB MATTRESS (DEFLATED).

PNEUMATIC CRIB MATTRESS (INFLATED).

A RUBBER WITH A LEATHER HEEL SEAT.

Rubbers have to stand a good deal of hard wear at the best; and when they get it both ways, outside and inside, full service can hardly be expected. And they are bound to get it both ways when the leather shoe which goes into the rubber has projecting nails in the heel. To guard against this contingency the Converse Rubber Shoe Co. puts a leather seat in the heel of a number of its most popular shoes, sandals and "self-actings" for men, and croquets and storm rubbers for women. Where this piece of leather is put in the heel of the rubber, it is a matter of no particular consequence whether the leather heel has any exposed nail heads or not. The illustration shows the position of this leather seat. [Converse Rubber Shoe Co., Malden, Massachusetts.]

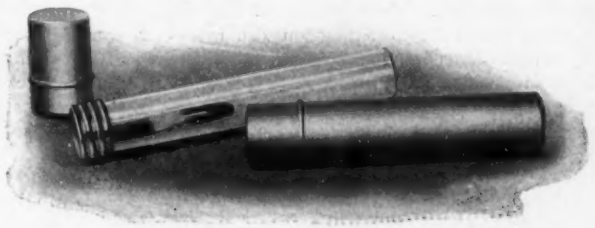


LEATHER HEEL SEAT.

A DEVICE FOR DETECTING ELECTRICAL CURRENTS.

Accidental electrocution is by no means a rare occurrence. Scores of workmen have had their lives snuffed out because they started to work upon wires or apparatus from which they supposed the electrical current had been shut off when it had not. The former methods of determining whether the wire or apparatus was "live" or "dead" were most uncertain, as they depended upon the perfect working of switch boards and upon the unfailing care of workmen, who are sometimes unreliable through carelessness and sometimes through inexperience.

A little apparatus has been devised—extremely simple in character, but accurate—by which the presence of any voltage above 500, either direct or alternating, can always be detected. This device consists of a delicate silver leaf mounted upon a copper terminal, which is hermetically sealed within a glass tube. The metal cap of this tube forms the test terminal which is advanced toward the conductor or apparatus. The glass of the tube affords protection for the operator. The silver leaf will stand perpendicular to the terminal when in an electrical field, and will lie in its normal position if there is no potential present. This electroscope is made in two sizes—one as shown in the cut for pocket use, which the workman can conveniently carry with him, and the other a considerably larger size with wooden handle, for use in power houses and electrical stations.



ELECTROSCOPE.

THE TYRIAN "HOLD-TITE" ANTI-SKID TIRE.

A glance at the accompanying illustration of the Tyrian tire shows how the anti-skid qualities are obtained. There are two evenly moulded channels running around the whole tire, which permit the shoulder in the center to take hold of the roadway. In addition to that there is a large number of cross channels, about an inch apart, which make it easy in starting for the tire to grip the road. Every autoist wants to avoid chains wherever it is possible. Under the best conditions they are an annoyance. The manufacturers of this tire claim that it takes hold of the road even under conditions of snow and ice just as well as a chain can do. These tires are made of the best Sea Island cotton and Upriver Fine Pará and have behind them the company's 56 years of experience in the manufacture of high grade rubber goods. [Tyer Rubber Co., Andover, Massachusetts.]

THE accepted authority on South American rubber—"The Rubber Country of the Amazon," by Henry C. Pearson.

FOR A DOZEN DIFFERENT PURPOSES.

Multum in parvo is the motto of the true camper. He wants every article of his outfit to serve as many purposes as possible—the more the better. Now here is an article called the Sportsman's "Utility" Cushion that will appeal to every sportsman. It is a rubber cushion, shaped like the accompanying illustration, made to fit around the neck. When it is deflated it can be carried in the pocket. When it is full of air it surrounds the neck and covers both shoulders with a thick pneumatic cushion, on which guns, paddles or canoes can be carried for an indefinite length of time without leaving a sore spot next day. Moreover, when you get back to camp it serves as a cushion by day and a pillow by night. The fisherman or the duck hunter will find it vastly preferable to sitting on damp logs or wet ground. Then again it makes a perfect swimming collar, and in case of need an effective life preserver. It is covered with brown duck to increase its service. [Iver Johnson Sporting Goods Co., Boston, Massachusetts.]

THE SPORTSMAN'S "UTILITY" CUSHION.

TO STRIP INSULATION FROM WIRE.

The ordinary way of removing insulation from wire is to take a jack-knife and do it laboriously and with considerable danger to the fingers—not to mention more or less damage to the wire. A little tool has been invented that will obviate all this, making it possible to remove insulation from single or duplex wires, easily and rapidly. It is a small tool—only 3½ inches long and 1½ inches wide, so that it easily can be carried in the pocket It is shown in the accompanying cut. It consists of a steel spring handle, with cutting edges, constructed especially for this work. On referring to the illustration it will be noticed that there are three twin sets of cutters. The double cutters at the right are for the purpose of separating duplex wire; the smaller double set in the center is for use in splitting insulation on a single wire; the parallel scraping jaws at the left are for the purpose of removing the insulation and scraping the wire clean and ready for soldering. [Mathias Klein & Sons, Chicago, Illinois.]

THE WIRE STRIPPER.

INSULATION PARTLY REMOVED FROM WIRE BY STRIPPER.

A RUBBER SLEEP PRODUCER.

A recent issue of one of the New York dailies, in its Sunday magazine section, contained an illustrated article on a new sleep-producing machine, consisting of a small tank of water, some distance above the sleeper's—or rather the non-sleeper's—head, from which runs a rubber tube, carrying water through a small rubber bag or pad fastened over the patient's forehead; the theory being that the rhythmic sensation of the water flowing slowly through the thin rubber bag on the forehead produces a soothing effect and soon invites sleep. The name of the inventor of this apparatus, or of the factory where it is made, is not disclosed, and inquiry fails to bring the desired information; but as the apparatus is quite simple, requiring not much more than an ordinary wooden pail and a small rubber tube, any insomniac who is interested can construct his own equipment and try the experiment.

RUBBER TIPS FOR SHOE SOLES.

In the United States, rubber heels have become quite popular; there are also quite a good many rubber soles worn, but we have not yet begun to use fractional parts of heels or soles. In the Old World they carry economy rather farther than we do here, and make use of small rubber tips to cover places in the shoe that are badly worn. The accompanying cut shows two rubber tips which are intended to be cut apart and used on the sides of the soles. [Millwall Rubber Co., of White City, Harpenden, England.]

A PAIR OF SOLE TIPS.

"LONGALYFE" FOR RUBBER.

The most interesting toy for the boy of these days is the model aeroplane which, with a motive power of rubber bands, can be made to sail through the air for a thousand feet or more. But the life of a rubber band under tension is not so very long. An English firm has recently brought out, under the name of "Longalyfe," a preparation which it claims lengthens the life of rubber by preserving its natural elasticity. It is especially recommended for use on model aeroplane rubber, "as it permits a greater number of turns to be made, and at the same time giving more power in the winding, owing to the elasticity of the rubber being increased." This preparation has been subjected to many tests and experiments, and its use, it has been proved, will materially lengthen the life of rubber goods. [Allen, Knight & Co., London, E. C., England.]

TIRES AND CHAINS ALL ONE.

The chain has come into considerable vogue among motorists, because it helps the tire to grip the roadway, particularly when because of ice and snow the roadway is likely to be slippery; but the metal chain has two distinct disadvantages: it is very hard on the road—a feature which, of course, does not keenly interest the motorist— and it is very hard on the tire—a feature that does keenly interest him. The United States Tire Co. has just brought out a new development of chain construction that obviates both of its disadvantages, because it makes the chain a constituent part of the tire. Instead of being metal it is rubber. In other words, there is a raised pattern of a double chain running around the ridge of the shoe, as shown in the illustration. This rubber chain grips the road, and, of course, obviates to a considerable extent the tendency to skid. At the same time it not only does not injure the tire but considerably increases its wearing capacity.

News of the American Rubber Trade.

THE RUBBER CLUB HAS SUPPER AND A TALK.

THE annual meeting of the Rubber Club of America, which was announced for April 15, for the election of officers and for the disposition of various other matters, was adjourned from that date, without the transaction of any business, to some future date when it would be possible for Mr. Henry C. Pearson, editor of THE INDIA RUBBER WORLD, to be present and give the members of the club a talk about his recent South American travels. The adjourned meeting was held at 6 o'clock on Monday evening, April 29, at the American House, Boston.

After the election of officers and the transaction of other business brought before the meeting, the members sat down at 7 o'clock to give active consideration to a supper, which constituted an agreeable addition to the usual routine of the annual meeting. While this was termed a "supper," it proved to be a very substantial and satisfactory repast.

At its termination Mr. Pearson gave an hour's pictorial talk on his recent trip through the West Indies, along the coast section of Venezuela and up the Orinoco. This was illustrated by a very generous number of handsome lantern views, a large part of them made from photographs taken by the lecturer himself. These slides covered scenes in Trinidad, in the various coast towns of Venezuela, and included some particularly attractive scenes in and around Ciudad Bolivar and Caracas, the capital city. A good many rubber trees were shown, and while the evening was one of unusual entertainment to the large number present, its chief interest to many of the members lay in the substantial addition to their fund of rubber information which it enabled them to acquire.

The ballot for officers resulted in the re-election of all the officers of the past year, with the exception of Mr. George B. Hodgman, who was elected vice-president. The officers for 1912 are as follows:

President, Frederic C. Hood; vice-president, George B. Hodgman; treasurer, J. Frank Dunbar; secretary, Frank D. Balderston; assistant secretary, Harold P. Fuller.

Honorary vice-presidents: L. DeWart Apsley, Augustus O. Bourn, John H. Flint, George H. Hood, Alexander M. Paul, Henry C. Pearson, Arthur W. Stedman.

Directors: Homer E. Sawyer, Elisha S. Williams, H. E. Raymond, Elston E. Wadbrook, Frederic H. Jones, H. S. Firestone, George E. Hall, A. L. Comstock, F. H. Appleton.

MEETING OF RUBBER SECTION OF AMERICAN CHEMICAL SOCIETY.

A "get together" meeting of the Rubber Section of the American Chemical Society was held at the Chemists' Club on Tuesday evening, April 16. The meeting was preceded by a dinner, there being thirty-six members present out of a total membership of 85. The dinner was a very successful one, as was also the meeting which followed. The meeting was addressed by A. D. Little, president of the American Chemical Society, and also by Dr. Charles F. Chandler, the "father" of the American Chemical Society.

The secretary announced the appointment of three committees by the Executive Committee, namely, the Analysis Committee, Specifications Committee and a Consultation Committee. The constitution of these committees provoked quite an animated discussion.

There seemed to be some divergence of opinion in regard to the proper complexion of these committees, some maintaining that they should consist largely, if not wholly, of representatives of manufacturers, while others thought that the representatives of the consumer should constitute the controlling element on the committees, their contention being that if the committees were not so constituted their reports when made would not be likely to receive sufficient consideration from the consumers. Then, again, there were those who thought that the manufacturers should be chiefly represented on the committees, but took the ground that the representatives should be apportioned among the different manufacturing lines. Dr. Little pointed out the fact that the members were present, not as representatives of particular manufacturers, instructed to look out only for their interests, or for the interests of their particular branch of the trade, but that they were present as members of the American Chemical Society, and should have at heart only the interests of the society rather than of the special branch of the rubber industry with which they were connected; but to a good many members this idea, while most laudable, seemed rather too Utopian to be practical at the present time. After considerable discussion it was decided to let the committees stand as at present composed and take the matter up again at some later meeting.

UNITED STATES RUBBER CO.'S PROFIT-SHARING PLAN.

ON April 22 the United States Rubber Co. made the following announcement regarding the profit-sharing plan, which it has been considering for some time, for the benefit of its employes:

"For some time past the directors of the United States Rubber Co. have been elaborating a plan for the further development of the interest, loyalty and efficiency of its many salaried men in its service and in that of its subsidiary companies. They have concluded to accomplish this by giving them a special motive for acquiring and retaining an interest in the company's stock, so as to make them substantially partners in the enterprise. For this purpose the company acquired in the market a large number of shares of its common stock at $45 per share, which it is now offering to them at the same figure, although the market price at present is somewhat higher. It is arranging to have the subscriptions paid for in instalments of not less than $4 per share per month. It is limiting the offer to those receiving $1,300 per annum and upwards, on the idea that they will best be able to meet the required payments, without taking an undue financial burden upon themselves. In order to make the privilege of subscribing at $45 per share still more attractive, and also to make it the more probable that the subscribers will retain their stock and so retain their interest in the company's welfare, the company proposes to give them a cash payment of $3 per share for each of the coming five years, provided the subscribers retain their stock during that period and obtain a certificate at the end of each year that their services have been satisfactory to the company.

"In order to make the payments on the subscriptions less burdensome to the subscribers, the company will distribute a certain profit-sharing fund among the subscribers. Any subscriber may until it is fully paid cancel his subscription at any time, and in that case will be refunded all he has paid, together with interest at 5 per centum per annum. In the case of the death of a subscriber during the five years, his family will receive the same benefit he would have received under these plans had he lived. Any forfeitures caused by unsatisfactory services or by termination of service or by cancellation will inure to the benefit of the other subscribers.

"If the plan works out successfully, it is intended to make a similar offer in each succeeding year, the price of such future stock subscriptions, however, to be determined partly by the then prevailing market price of the stock and other conditions prevailing at the time, and it is believed that enthusiastic and highly interested work and prolongation of service will make substantially for the welfare of all concerned."

UNITED STATES RUBBER CO.'S ISSUES.

TRANSACTIONS on the New York Stock Exchange for five weeks, ending April 27:

COMMON STOCK, $25,000,000.

[The treasury of a subsidiary company holds $1,334,000.]

Last Dividend, April 30, 1912—1%.

Week	March 30	Sales	29,700	shares	High	56	Low	52⅝
Week	April 6	Sales	17,400	shares	High	56¼	Low	54½
Week	April 13	Sales	23,150	shares	High	57½	Low	56
Week	April 20	Sales	9,605	shares	High	56⅜	Low	54¼
Week	April 27	Sales	25,300	shares	High	61½	Low	55¼

For the year—High, 61½, April 26; Low, 45¼, February 1.
Last Year—High, 48½; Low 30⅛.

FIRST PREFERRED STOCK, $39,824,400.

Last Dividend, April 30, 1912—2%.

Week	March 30	Sales	1,500	shares	High	114¼	Low	113⅞
Week	April 6	Sales	1,245	shares	High	114½	Low	114¼
Week	April 13	Sales	1,905	shares	High	115⅛	Low	114¾
Week	April 20	Sales	300	shares	High	113½	Low	112⅜
Week	April 27	Sales	1,450	shares	High	114¼	Low	112½

For the year—High, 115, April 11; Low, 109, January 30.
Last year—High, 115½; Low, 104.

SECOND PREFERRED STOCK, $9,965,000.

Last Dividend, April 30, 1912—1½%.

Week	March 30	Sales	2,300	shares	High	79½	Low	78
Week	April 6	Sales	700	shares	High	79¾	Low	79⅛
Week	April 13	Sales	1,915	shares	High	80½	Low	79½
Week	April 20	Sales	500	shares	High	79	Low	78½
Week	April 27	Sales	2,000	shares	High	80¾	Low	79

For the year—High, 80¾, April 25; Low, 75, January 23.
Last year—High, 79; Low, 66.

SIX PER CENT. TRUST GOLD BONDS, $19,000,000

Outstanding of the 1908 issue of $20,000,000.

Week	March 30	Sales	37	bonds	High	104⅝	Low	104¼
Week	April 6	Sales	19	bonds	High	104½	Low	104⅜
Week	April 13	Sales	31	bonds	High	104⅝	Low	104¼
Week	April 20	Sales	66	bonds	High	104½	Low	104⅛
Week	April 27	Sales	55	bonds	High	104¾	Low	104⅜

For the year—High, 105, February 24; Low, 103¾, January 6.
Last year—High, 105; Low, 101¾.

AN AERONAUTICAL EXHIBITION.

THE first annual international aeronautical exhibition in America will be held in the Grand Central Palace in New York from May 9 to 18 next, under the auspices and control of the Aero Club of America.

Notwithstanding the many aeroplane shows which have been held during the past year—generally in connection with exhibits in other lines—no comprehensive exhibition of aeronautics has hitherto been undertaken in this country. The committee in charge intends to conduct the show along the lines of the exhibitions which have been held with such success in Paris.

The exhibition will embrace the most modern aeroplanes, spherical balloons and dirigibles of both European and American manufacture, and will include specific craft which have won special honors.

The exhibits will also cover completed apparatus for aerial locomotion, including balloons, dirigibles and aeroplanes, while interspersed with the aerial craft will be booths for the exhibit of accessories for all methods of air travel. Space on the main floor has also been allotted for the display of trophies, and the historical exhibits will have a place on the mezzanine. The balcony will be given over to accessories and to pictures and photographs. Besides the display of aeroplanes and accessories there will be a display of models, designs and patents. A section of the exhibition hall will be set apart for the display of plans, specifications and drawings. Inventors will find this a fine opportunity to introduce their working designs to those interested in aviation as well as to the general public.

The display of aeronautic accessories will include fabrics for aeroplanes and dirigibles. This department will, of course, be of special interest to rubber manufacturers.

TRADE NEWS NOTES.

MEYER COHN, 2 Hudson street, New York, whose head offices are in Hanover, Germany, importer of rubber factory supplies, has lately been importing large quantities of talc and soapstone, the talc being extremely white in color and the best quality obtainable in Europe. He is prepared to deliver soapstone in pieces. Another specialty is infusorial earth, of which he carries about 20 different grades.

On April 4 the directors of the United States Rubber Co. declared from net profits a quarterly dividend of 2 per cent. on the first preferred stock, a quarterly dividend of 1½ per cent. on the second preferred stock, and a quarterly dividend of 1 per cent. on the common stock of the company, to stockholders of record on April 15, 1912; and these dividends were paid April 30.

For the first time in the statistics of the American trade imports and exports of aeroplanes have appeared during the last year. Figures for the eight months ending with February last show the number of aeroplanes imported as 13, valued at $48,633, the number exported as 26, valued at $99,796, of which 19, with a value of $71,195, were of domestic manufacture.

A fire did about $10,000 damage to the plant of the Buffalo Foundry and Machine Co., Buffalo, New York, early in the morning of April 11. Because of its steel and glass construction the building is practically fireproof excepting the roof, where the greatest damage was done. The building is 145 x 320 feet and contains 175,000 square feet of ribbed glass. The blaze started in the coreroom and quickly spread to the roof which was in flames when the first firemen arrived. The work was hazardous because of the breaking glass, and it was a most stubborn fire to fight. No one was hurt, and the plant was running as usual the following Monday.

The exportation of American tires during the month of February, 1912, amounted to a value of $267,036, as compared with $179,047 in the same month of 1911, a gain of more than 45 per cent. During the eight months ending with February, $1,641,373 worth of tires were shipped abroad, as against $1,194,720 worth in the same period of the preceding year, an increase of almost 37 per cent.

On May 1 the New York offices of the Underwriters' Laboratories were consolidated at No. 135 William street, in charge of Mr. Dana Pierce, electrical engineer and agent at New York. Mr. Pierce has been in charge of the electrical department of the laboratories at the principal office in Chicago during the past six years. A station for testing electrical appliances will be operated in connection with the New York offices, and be used chiefly in the service of inspections at factories and labeling. Applications for tests of electrical fittings may be made either at the principal offices and testing station at Chicago, or at the offices in New York.

It is reported that included in the vast volume of merchandise lost with the sinking of the *Titanic*, the boat had on board 125 tons of rubber intended for various consignees on this side. Practically all of this rubber was covered by insurance.

The fire that occurred on Saturday, April 13, in the warehouse of S. Birkenstein & Sons, scrap rubber dealers of 377 West Ontario street, Chicago, Illinois, was not serious enough to interfere in any way with the company's prompt delivery of customers' orders.

SALE OF CONTINENTAL TIRES.

THE Hub Cycle Co., of Boston, recently purchased the entire stock of Continental tires from the Boston branch of the United States Tire Co., and is offering them at an attractive reduction in price. The tires will be adjusted on the regular 3,500 mile basis for any of the well-known makes of the United States Tire Co.

"RUBBER Tires and All About Them"—a book for everybody who has to do with tires.

TRADE NEWS NOTES.

The annual report for 1911 of the Canadian General Electric Co., Limited, shows that the company enjoyed a very prosperous year, the profits, which were the largest in the history of the company, amounting to $1,405,889.70. Additions were made to plant and equipment, so as to give the factory a larger capacity, without materially increasing the overhead expense account. In addition to paying 7 per cent. on the preferred and common stock, amounting to $525,109.37, over $350,000 was written off for depreciation, leaving a balance of over $364,000 which sum, added to the balance at the end of the previous year, together with the reserve fund, gives the company a total surplus of $2,345,311.30. The volume of business during 1911 exceeded that of any preceding year.

The American Telephone and Telegraph Co., has issued its annual report for 1911. At the end of last year the number of stations connected with this system in the United States was over 6,600,000, an increase of three-quarters of a million over the preceding year. The Bell Telephone toll lines now reach 70,000 places in the United States, as compared with 65,000 postoffices and 60,000 railroad stations.

During the year, over $58,000,000 was applied out of revenue to maintenance and reconstruction purposes. The total provision for maintenance and reconstruction charged against revenue for the last nine years is over $342,000,000. The total mileage in use for exchange and toll service shown in this report is nearly 13,000,000 miles, one-tenth of that mileage being added last year.

The annual report for 1911 of the Western Electric Co., Chicago, Illinois, shows a prosperous condition. Sales of the company for the year were $66,211,975—an increase of nearly 5 per cent. over the preceding year. The increased cost of labor and material during the year was to some extent overcome by various economies and improvements. Additional buildings aggregating over 250,000 square feet of floor space were completed during the year. On January 1, 1912, the total number of employes in the service of the company was 23,423.

The Turner, Vaughn & Taylor Company, which for a great many years has been building specialties for the rubber trade, prominent among which are the various tub washers and reclaimed water separators, is now in position to furnish the trade with a full line of grinding and mixing mills, cracker rolls, hydraulic accumulators, presses, hose machinery and the usual line of power transmission. The company is not in shape as yet to handle calenders, but hopes to be within a short time.

THE PLYMOUTH RUBBER CO. MOVES TO CANTON.

The Plymouth Rubber Co., whose factory has been located at Stoughton, Massachusetts, has sold its plant in that town and is moving its machinery and its business into a large new plant recently erected at Canton, Massachusetts, where the company has acquired a tract of 72 acres of land, and where it has excellent water power, a private spur-track and many other manufacturing conveniences. It is still running its Stoughton plant, but the greater part of its work is now being done in Canton, and its offices have been installed in that place in temporary quarters, pending the construction of a new administrative building.

TYER RUBBER CO.'S OFFER TO EMPLOYES.

IN connection with its large increase in facilities and the erection of additional buildings, the Tyer Rubber Co., Andover, Massachusetts, has decided to increase its capital stock by an issue of an additional $200,000 6 per cent. cumulative preferred stock. It decided to give its own employes the first opportunity to subscribe for this new stock at the par value of $100 per share. The entire issue was largely over-subscribed by the employes, showing on their part a keen appreciation of the company's offer. It is expected that this stock will be issued some time in June.

RUBBER MOUTHPIECES PAY 35 PER CENT. DUTY.

The protest made by the Hanover Vulcanite Co., 48-50 West Fourth street, New York, against a recent decision of the customs department has been sustained by the Board of United States General Appraisers. The decision referred to an importation of finished mouthpieces made of hard rubber. The Collector's office assessed these as smokers' article, under paragraph 475, which calls for a 60 per cent. *ad valorem* duty and includes pipes and other smokers' articles. The Board of Appraisers decided that these hard rubber mouthpieces should be assessed under paragraphs 463 and 464, covering "manufacturers of gutta-percha, vulcanized india rubber, known as hard rubber," etc., and carrying a duty of 35 per cent. *ad valorum*. The general appraiser's opinion was as follows: "It is not clear that the merchandise here under consideration is any more a smokers' article than would be the crude rubber from which it is manufactured. It is simply an article from which a smokers' article can be and eventually will be made The protest is, therefore, sustained and the Collector directed to reliquidate the entry, assessing the duty under paragraph 464."

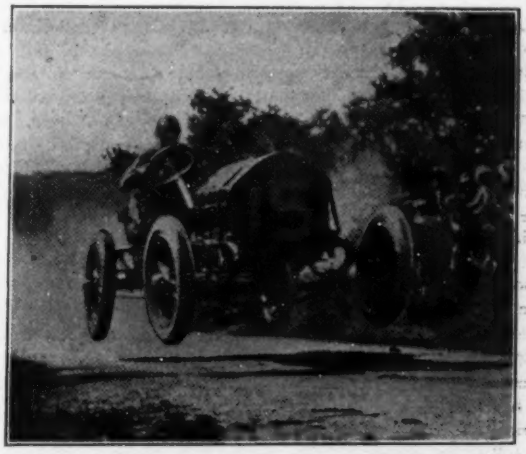
A PROPHESY OF CANADIAN FOOTWEAR PRICES.

A recent number of a commercial paper published in Winnipeg quotes the general sales manager of the Canadian Consolidated Rubber Co., Ltd., as saying: "Crude rubber continues to advance in price. The quotation yesterday was $1.23. 1912 costs have been figured on lower prices, and if the market stands or advances, higher selling prices are inevitable."

Possibly this official may be correct as far as Canadian prices are concerned, but, it seems hardly likely that prices of rubber footwear in the United States will be advanced unless rubber goes to a materially higher figure than now appears probable. Footwear manufacturers in this country but recently reduced their prices, and are not likely to advance them again without substantial reason.

TIRES THAT STOOD A 42-FOOT JUMP.

An incident occurred in a recent hill-climbing contest in Maine that gave the advertising agent of some tire manufacturer the chance of his lifetime. The car was going at great speed when it struck a gulley and took a flying leap in the air, not landing on the road again for a distance of 42 feet. Any tires that can stand a 42-foot jump and still go cheerfully about their work are fairly good tires. That is a test that very few manufacturers or dealers would care to subject their product to.



Courtesy of *Motor*.

THE CAR THAT MADE THE WONDERFUL JUMP.

A BOOK for everybody interested in tires—"Rubber Tires and All About Them"—this office.

PERSONAL MENTION.

Miss Carolyn Stokes, daughter of William J. B. Stokes, president of the Home Rubber Co., Trenton, New Jersey, was married on the 24th of April, to Harold Franklin Blanchard. The ceremony took place at the State Street Methodist Episcopal Church of that city. Mr. and Mrs. Blanchard will make their home at Maplewood, New Jersey.

André Crémazy, president of the Chamber of Agriculture, Cochin China and representative of that colony at the London International Rubber Exhibition 1911, and also a member of the European advisory committee to the New York exhibition 1912, has written an interesting pamphlet on Pará Rubber and Cocoanut in Cochin China, which he dedicates as follows: "To Mr. A. Staines Manders in remembrance of his kindness to the French delegates, at the last London International Rubber Exhibition and in high appreciation of his services rendered to the rubber question."

Charles W. Harris, lately with the Chicago office of the Swinehart Tire & Rubber Co., has become connected with the Kelly-Springfield Tire Co. and will have charge of a branch store for the company in Seattle, Washington. Mr. Harris was connected with the Kelly-Springfield company ten years ago, when it was manufacturing solid rubber tires.

Frank A. Seiberling, president of the Goodyear Tire and Rubber Co., had engaged passage for himself, wife and daughter for the return trip on the *Titanic*. Undismayed by the disaster, they sailed April 19 for Europe on the *George Washington*.

William H. Palmer, of the advertising department of the United States Rubber Co., was called to Tewksbury, Massachusetts, by the fatal illness of his father, who died on April 22, in his eighty-second year. The funeral was held at that place on April 24.

Charles I. O'Neil, who has been connected with the New York office of the United States Rubber Co. for ten years (for five years holding an important position in the selling department), resigned from his position early in April. As an indication of his popularity among his associates, he was presented when he left with a very handsome scarf pin and tie clasp by the other members of the office staff. Mr. O'Neil did not announce his future plans, but inasmuch as he devoted his spare time for some years to the study of the law, it is highly probable that he intends to follow in the footsteps of Choate and Root and the other leading luminaries of the legal profession.

F. H. Peaty, of the Raw Products Co., importers of crude rubber, balata and gutta-percha, New York, is enjoying a two months' vacation trip, visiting the interesting scenes on the continent.

COMMODORE E. C. BENEDICT RETURNS.

Commodore E. C. Benedict, one of the directors of the United States Rubber Co., arrived home on April 17, after his four months' South American trip. He sailed from New York on December 19, on the steam yacht *Alvina*, and visited various West India islands and South American ports, going up the Amazon to his rubber plantation, and then retracing his course down the river, coasting southward as far as Buenos Ayres, where he left his yacht and boarded the *Bluecher* for a trip through the straits of Magellan and up to Valparaiso on the Pacific. Thence he crossed the Andes and returned by train to his yacht. He was accompanied on the voyage by Colgate Hoyt, Edward Beers, Legrand Benedict, his daughter, Mrs. Clifford B. Harmon; Miss Mary Hoyt and Miss May Bird, with Dr. Arnold, of New York, as ship's surgeon.

A BOOK for everybody interested in tires—"Rubber Tires and All About Them"—this office.

MR. MEASURE GOES TO FEDERAL.

The appointment of Charles Measure as manager of the carriage and motor truck tire department of the Federal Rubber Manufacturing Co., of Milwaukee, will be of interest to the vehicle rubber trade. Mr. Measure was connected with Morgan & Wright for eleven years, first as salesman in New England, and then as manager of their auto tire department from 1903 to 1906, leaving that position to accept the management of the Goodyear branch in New York City. After serving for five years in this latter capacity, he was transferred to Akron as manager of the solid tire department of that company, resigning on March first to join the Federal company in the capacity noted. It is expected that under the aggressive management of Mr. Measure, Federal carriage and motor truck tires will rapidly take rank among the most satisfactory and popular brands on the market.

SOME GOOD ADVERTISING BY THE H. F. TAINTOR MFG. CO.

The value of advertising cannot always be judged by its cost. The H. F. Taintor Manufacturing Co., for instance, has recently been distributing some advertising that is not particularly expensive, but is nevertheless very effective, as it possesses a permanent interest. This advertising is in the shape of two blotters, one a small-sized 6-inch blotter, which, on the coated side, has an exceedingly good half-tone reproduction of a photograph of lower New York as seen from the North River. This picture shows a number of the extraordinary buildings that have gone up within the last few years in that part of the city, the Singer and City Investing buildings being in the center, with the Hudson Terminal and the Park Row showing to the north, and the West Street. American Surety and others to the South. The larger blotter, 9-inch size, shows on its coated side a very good map, printed in five or six colors, of New York City and its environs. While both of these blotters will undoubtedly be used for blotting purposes, they are more likely to be preserved for their useful pictorial information. The larger blotter has a small cut of the Taintor Company's large works at Bayonne, New Jersey, where the French chalk and English cliffstone, from which the Taintor whiting is manufactured, can be brought right to the factory's dock on the largest ocean steamers, and delivered with the least waste of time and expense.

THE KNICKERBOCKER SPRAYBRUSH BUSINESS CHANGES HANDS.

The Knickerbocker Manufacturing Co., 211-15 West Schiller street, Chicago, has taken over the entire Knickerbocker Spraybrush business, formerly owned by the Progress Company. The new company will concentrate its whole attention upon the manufacture and sale of appliances for the bath, shampoo and massage. The management states that the sale of the Knickerbocker Spraybrush, which has been extensively advertised, will be pushed more vigorously than ever before. This fact will be of interest to "Spraybrush" dealers throughout the United States, as indicating the co-operation which it will be the policy of the new company to extend.

J. H. LANE & CO. MOVE UPTOWN.

ON May 1, J. H. Lane & Co., whose offices for a long time have been located at 110 Worth street, New York city, took possession of their new quarters at Fourth avenue and Twenty-fifth street, where they have spacious and most attractive offices. They are the first of the large selling agents for cotton mills to move uptown, but undoubtedly there will soon be others, as the general trend of business in many lines is towards the uptown section in the neighborhood of the large hotels. The superior convenience and accessibility of this section to out-of-town buyers is obvious.

The Walpole Rubber Co., whose headquarters are at 185 Summer street, Boston, Massachusetts, has acquired the business of the Consumers' Rubber Co., Bristol, Rhode Island, manufacturers of rubber covered insulated wire and tennis shoes. Terrence McCarty will be retained to operate the plant.

NEW INCORPORATIONS.

Alpha Rim Co., March 23, 1912; under the laws of New York; authorized capital $100,000. Incorporators: Clarence M. O'Donnell, 301 St. Nicholas avenue, New York; George H. Tice, 480 Sixteenth street, Brooklyn, New York, and Max P. Bau, 197 Norman avenue, Brooklyn, New York. Location of principal office, Brooklyn, New York. To manufacture auto rims, tires, auto supplies, etc.

Bomadeli Mercantile Co., March 19, 1912; under the laws of New Jersey; authorized capital $125,000. Incorporators: George A. P. Boulden, 525 River street, Hoboken, New Jersey; George J. Saulpaugh, 843 Park place, Brooklyn, New York, and Arthur J. Westmermayr, 90 Nassau street, New York. The company has been incorporated to own, operate, sell and otherwise deal in rubber plantations in South Africa or other places.

The Borden Rubber Co., April 20, 1912; under the laws of New York; authorized capital $10,000. Incorporators: Henry Perlish and Samuel Lund—both of 46 Cortland street—and Clarence E. Thronall, 50 Church street—all of New York. Location of principal office, New York.

Century Rubber Works, March 16, 1912; under the laws of Illinois; authorized capital $30,000. Incorporators: Charles J. Monahan, J. A. Netzel and Frank M. Netzel. To manufacture and deal in rubber and gutta-percha and all goods in which same are component parts.

Chemical Rubber Co., March 15, 1912; under the laws of Wisconsin; authorized capital $150,000. Incorporators: J. J. Lamkey, Frank P. Hatter and J. C. Evans. To manufacture, sell and deal in chemical rubber, etc.

East New York Raincoat Co., Inc., April 19, 1912; under the laws of New York; authorized capital $10,000. Incorporators: Morris Hyams, 130 Thatford avenue; Michael Kohen, 1571 Eastern Parkway, and Rosa Hyams, 130 Thatford avenue—all of Brooklyn, New York. Location of principal office, Brooklyn, New York. To manufacture rubberized clothing, etc.

Eureka Non-Skid Manufacturing Co., March 28, 1912; under the laws of New York; authorized capital $2,500. Incorporators: Henry E. Bradford, East Williston, Long Island; James Colbourne, London, England, and Brown Bolston, Plainfield, New Jersey. Location of principal office, Brooklyn, New York. To manufacture auto accessories, etc.

Footwear Manufacturing Co., April 1, 1912; under the laws of New York; authorized capital $5,000. Incorporators: Chas. F. Denike, 188 Weirfield street, Brooklyn, New York; Henry S. Myers, 1010 Hoe avenue, Bronx, New York, and Morris Lefkowitz, 1076 DeKalb avenue, Brooklyn, New York. Location of principal offices, Brooklyn, New York. To manufacture and deal in shoes, rubbers, etc.

The Goodrich Raincoat Co., March 29, 1912; under the laws of Illinois; authorized capital $2,500. Incorporators: John A. Bussian, Arthur Rosenthal and Ella Stier. The company has been incorporated for the purpose of buying, selling, manufacturing and vending of raincoats, etc.

Keystone Leathergoods Co., April 15, 1912; under the laws of New York; authorized capital, $3,500. Incorporators: E. Brower, 288 Seventh street, Maurice Liften, 229 West 130th street—both of New York, and Henry Chaskin, 131 Debevoise street, Brooklyn, New York. Location of principal office, New York. To manufacture and deal in leather and rubber goods, etc.

Lancaster Engineering Corporation, August 1, 1911; under the laws of New York; authorized capital $10,000. Incorporators: William A. Keddie, 3 Maiden Lane, New York; Edward J. Newell and Edward J. Hogerty—both of 42 Broadway, New York. Location of principal office, New York. To manufacture machinery, etc.

National Tire Co., April 8, 1912; under the laws of New York; authorized capital, $50,000. Incorporators: Harry Davies, 246 West Forty-sixth street; Thomas H. Hopkirk, 30 Church street—both of New York—and Ivan V. Weisbrod, St. George, Staten Island. Location of principal office, New York.

The Ohio Tire Co., April 13, 1912; under the laws of New York; authorized capital, $500. Incorporators: Samuel Kessel, 1405 Forty-second street, Brooklyn, New York; Fanny Karpowitz and Max Karpowitz—both of 166 South Second street, Brooklyn, New York. Location of principal office, New York. To manufacture tires and other auto accessories.

Rubber-Aer Co., April 15, 1912; under the laws of New York; authorized capital $25,000. Incorporators: Daniel B. Crane, Jr., 4164 Brander street, Woodhaven, Long Island; Ernest Lavoie, 113 Seventh avenue, New York, and Hugh M. Smith, 222 Clark street, Westfield, New Jersey. Location of principal office, New York. To manufacture rubber goods, auto accessories, etc.

Sponge Rubber Inner Heel Co., April 10, 1912; under the laws of New York; authorized capital $25,000. Incorporators: Alexander M. Patch, Lebanon, Pa.; Lowen E. Ginn and W. Beebe Price—both of 115 Broadway, New York. Location of principal office, New York.

Standard Shoe Co., March 29, 1912; under the laws of Maine; authorized capital $35,000. Incorporators: G. J. Lamontagne, William E. Kinney—both of Claremont, New Hampshire—and Horace Mitchell, Kittery, Maine. The company has been incorporated to deal in—wholesale and retail—boots, shoes, etc., and to buy and sell real estate that may be useful in said business.

Surinam Rubber Estates, Inc., March 30, 1912; under the laws of Delaware; authorized capital $1,000,000. Incorporators: Joseph F. Curtin, H. O. Coughlan—both of New York—and James M. Slatterfield, Dover, Delaware. The company has been incorporated for the purpose of acquiring lands and estates for the cultivation of rubber.

Tire Core Company of America, April 19, 1912; under the laws of New York; authorized capital $100,000. Incorporators: Russell V. Stuart, 244 West Seventy-second street, Patrick J. O'Connell, 48 Leonard street, and Houston P. Reader, Lafayette and Walker streets—all of New York. Location of principal office, New York. To manufacture tire cores, tires, rubber goods, etc.

The Charles H. Tucker Co., March 29, 1912; under the laws of New York; authorized capital $100,000. Incorporators: Chas. H. Tucker, Edward R. Wood and Henry W. Solomons—all of 1974 Broadway, New York.

Western Rain Coat Co., Inc., April 8, 1912; under the laws of New York; authorized capital $3,000. Incorporators: Harris Lapin, 1705 Bathgate avenue; Rose Isaacson, 1477 Washington avenue, and Philip Braslausky, 3777 Third avenue—all of New York. Location of principal office, New York.

HAS MR. FLINT BOUGHT THE TOLSTOY ESTATE?

THE New York "Times" in a recent issue contained the following paragraph sent by its Vienna correspondent: "According to information from a trustworthy source, Charles R. Flint of New York has acquired the late Count Tolstoy's estate at Yasnaya Polyana, Russia. It is said that Mr. Flint intends to establish an agricultural school and museum on the estate."

The paragraph goes on further to state that Mr. Flint had interested with himself five of the leading manufacturers of agricultural implements in the United States, and with their assistance proposed to erect on the Tolstoy estate a permanent exhibition of American agricultural machinery, and to use this machinery in cultivating the surrounding land as an object lesson to the Russian farmers in modern methods of agriculture. It is believed that with their fertile land, with proper machinery, they could get twice the crops with much less labor and expense.

Inquiry at Mr. Flint's office regarding the accuracy of the above paragraph failed to elicit either confirmation or denial.

Recent Patents Relating to Rubber.

UNITED STATES OF AMERICA.

ISSUED MARCH 5, 1912.

NO. 1,019,622. Container and dropper. H. W. Cadwell, assignor to F. Stearns & Co.—both of Detroit, Mich.

1,019,192. Vehicle wheel. A. Schick, Wheeling, W. Va.

1,019,205. Erasing device for typewriters. H. M. Vaughan, Newton, Iowa.

1,019,286. Pneumatic tire. W. I. Twombly, New York.

1,019,301. Emergency attachment for vehicle wheels. E. T. Burrowes, Portland, Me.

1,019,340. J. C. McGowan and R. W. Michler, Perris, Cal.

1,019,401. Horseshoe. L. Ahrens and E. M. Gilowsky, Milwaukee, Wis.

1,019,420. Fire nozzle. T. D. Brath, Rochester, N. Y.

1,019,431. Sectional insulator. J. C. Gillette, Baltimore, Md., assignor to General Electric Co., New York.

1,019,468. Tire protector. R. V. Hastings, Chicago, Ill.

1,019,506. Vulcanizing mould. W. A. McCool, Beaver Falls, Pa., assignor to Hercules Tire & Rubber Co., of Delaware.

1,019,536. Pneumatic wheel. A. C. Schroeder, Derry Station, Pa.

1,019,557. Tire alarm. E. A. Terpening, Mokena, Ill.

1,019,591. Pneumatic hub. C. E. De Boos, Temora, New South Wales, Australia.

1,019,607. Packing. A. C. Danver, Providence, R. I.

1,019,674. Tire inflation indicator. A. Joly de Lotbiniere, Srinagar, India.

Trade Marks.

52,026. Revere Rubber Co., Chelsea, Mass. The number 1100. For belting, hose and machinery packing, etc.

54,231. Boston Rubber Shoe Co., Boston, Mass. The word *Storm*. For rubber boots and shoes.

60,266. Parker, Stearns & Co., New York. The words *Spring Maid*. For rubber bathing caps.

60,267. Parker, Stearns & Co., New York. The words *Water Nymph*. For rubber bathing caps.

60,524. Jenkins Rubber Co., Elizabeth, N. J. The words *Jen R Co.* crossed in a diamond.

ISSUED MARCH 12, 1912.

1,019,775. Foot rest for bath tubs. F. Forsberg, Chicago, Ill.

1,019,832. Wheel. W. Phillips, Cape May, N. J.

1,019,835. Tool for removing insulation from wires. H. Prack, Ottawa, Ill.

1,019,845. Vehicle wheel. N. Schenk, St. Louis, Mo.

1,019,846. Resilient wheel. N. Schenk, St. Louis, Mo.

1,019,847. Resilient wheel. N. Schenk, St. Louis, Mo.

1,019,896. Vehicle wheel. Hayes W. Henry, Melvern, Kan.

1,019,898. Resilient heel. L. N. Jacobi, Chicago, Ill.

1,019,973. Automobile tire. J. F. Lieb, Philadelphia, Pa.

1,020,071. Umbrella for theatrical purposes. H. Askin, Chicago, Ill.

1,020,115. Packing ring. W. W. Price, Dayton, Ohio.

1,020,138. Adjustable heel for footwear. H. E. Fry, New York.

1,020,140. Removable rim for vehicle wheels. C. D. Galvin, Merchantville, N. J.

1,020,160. Shoe pad. L. S. Rowe, Santa Barbara, Cal.

1,020,260. Spring wheel. E. W. Burner, Luray, Va.

1,020,288. Tire tool. P. E. Kenney, Celina, Ohio.

1,020,367. Exerciser. R. B. Patterson, Jr., Chicago, Ill.

Trade Marks.

31,536. Peerless Rubber Mfg. Co., New York. The word *Colonial*. For belting composed of rubber.

55,764. A. G. Spalding & Bros., Jersey City, N. J. The word *Midget*. For golf balls.

60,346. Charles A. Daniel, Philadelphia, Pa. The words *Quaker City*. For rubber hose, belting, etc.

61,228. I. B. Kleinert Rubber Co., New York. The word *Farcoola* written across a fan. For dress shields.

ISSUED MARCH 19, 1912.

1,020,464. Automobile tire. W. S. Temple, Sidney, Ill.

1,020,478. Wheel rim. I. J. Carpenter, Marlboro, Mass.

1,020,489. Antiskid grip. L. B. Gaylor, Stamford, Conn.

1,020,496. Driving belt. M. Hawe, Pelham Manor, N. Y.

1,020,497. Composition of spongy matter. A. H. Henderson, Baltimore, Md.

1,020,499. Fabric or cloth. A. H. Henderson, Baltimore, Md.

1,020,549. Vehicle tire. R. Glabaznya, Chicago, Ill.

1,020,661. Packing. J. Restein, Philadelphia, Pa.

1,020,678. Wheel rim. F. R. Barker, Boston, Mass.

1,020,724. Therapeutic device for the treatment of the eyes or ears. A. W. Stephens, New York.

1,020,738. Locking washer. C. Bauer, London, England.

1,020,797. Vehicle wheel rim. H. Bussing, Brunswick, Germany.

1,020,800. Repair heel. G. D. Coates, Torrington, Conn.

1,020,808. Bottle and stopper. F. W. Dufwa, Mexico, Mexico.

1,020,880. Insulator. A. M. Bourke, Maitland, New South Wales, Australia.

1,020,901. Wheel. Pierre Haerst, Chicago, Ill.

Design.

42,327. Rubber mat. E. H. Huxley, assignor to the National India Rubber Co.—both of Bristol, R. I.

Trade Marks.

55,268. B. H. Gladding Dry Goods Co., Providence, R. I. The words *Gladdings Quality* in a circle. For rubber boots, etc.

59,265. Victor-Balata & Textile Belting Co., Easton, Pa. The word *Axonelat*. For car lighting belting composed of woven duck impregnated with pure balata gum.

60,261. T. Martin & Bro. Mfg. Co., Chelsea, Mass. A picture of a crown. For elastic webs.

61,270. The Simplex Electrical Co., Boston, Mass. The word *Simcore*. For insulated wire.

ISSUED MARCH 26, 1912.

1,020,977. Vehicle wheel. L. L. Gregg, Jr., Lonejack, Mo.

1,021,059. Insulator. W. R. Markley, Findlay, Ohio.

1,021,072. Vehicle tire. C. A. Schenkel, Wabash, Ind.

1,021,142. Pneumatic walking attachment. M. W. Freeman, Millington, Mass.

1,021,171. Tread for pneumatic tires. F. G. Ward, Pittsburgh, Pa.

1,021,176. Inflatable dress or skirt shield. F. P. Baker, Malden, Mass.

1,021,240. Pneumatic hub for vehicle wheels. T. Duysens, Maastricht, Netherlands.

1,021,246. Vehicle tire. W. A. Giermann, Biencoe, Iowa.

1,021,307. Vehicle wheel tire. L. G. Fleming, Tarrytown, N. Y.

1,021,355. Spring wheel. J. C. Deckard and I. L. Deckard, Vincennes, Ind.

1,021,422. Tire for vehicle wheels. T. J. Mell, assignor to The Republic Rubber Co.—both of Youngstown, Ohio.

1,021,424. Tire bolt wrench. C. E. Oatman, Brookline, Mo.

1,021,495. Vehicle wheel. E. A. Glenn, Chicago, Ill.

1,021,467. Wheel. C. E. Martin and S. J. Clonkey, Washington, Pa.

1,021,510. Attachment for shoe heels. J. A. Enright, Columbus, Ohio.

1,021,515. Resilient wheel. C. D. Galvin, Merchantville, N. J.

1,021,561. Vehicle tire. Benjamin Clifford Swinehart, Youngstown, Ohio.

1,021,591. Resilient tire. C. Friederich, Tripp, S. D.

1,021,616. Pneumatic tire. J. McGinnis, Johnstown, Pa.

1,021,618. Wheel. G. H. Metcalf, Wilkinson, Miss.

1,021,711. Vehicle wheel tire. B. C. Swinehart, Youngstown, Ohio.

1,021,724. Mud guard for the wheels of motor and other vehicles. C. H. Nichols, Wolverton, England.

1,021,727. Tire chain mechanism. C. Peterson, Portland, Ore.

1,021,751. Resilient heel. H. H. Mathis, Camden, S. C.

Trade Marks.

60,058. Hood Rubber Co., Boston, Mass. Description of button on boot.

60,325. The Star Rubber Co., Akron, Ohio. The word *Nepto*. For water bottles, syringes, etc.

60,327. The Star Rubber Co., Akron, Ohio. The word *Luna*. For water bottles, syringes, etc.

60,329. The Star Rubber Co., Akron, Ohio. The word *Veno*. For water bottles, syringes, etc.

60,331. The Star Rubber Co., Akron, Ohio. The word *Saturn*. For water bottles, syringes, etc.

60,332. The Star Rubber Co., Akron, Ohio. The word *Jupiter*. For water bottles, syringes, etc.

60,764. E. Z. Jefferson, Sewickley, Pa. The word *Jasee*. For rubber valves, packing, etc.

60,765. E. Z. Jefferson, Sewickley, Pa. The letters *E Z*. For rubber valves, packing, etc.

61,461. Jackson-Eno Rubber Co., Los Angeles, Cal. The word *Samson*. For inner-shoe tire casings for automobile tires.

[NOTE.—Printed copies of specifications of United States patents may be obtained from THE INDIA RUBBER WORLD office at 10 cents each, postpaid.]

GREAT BRITAIN AND IRELAND.

PATENT SPECIFICATIONS PUBLISHED.

The number given is that assigned to the Patent at the filing of the application, which in the case of these listed below was in 1910.

**Denotes Patents for American Inventions.*

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, MARCH 6, 1912.]

26,093. India rubber substitutes from gelatine. J. Turns, 190 Warton Terrace, Heaton, Newcastle-on-Tyne.

26,127. Improvements in vacuum cleaning apparatus. J. I. Kirby, 62 Trinity Road, West Bromwich.

26,152. Puncture proof tire bands. G. W. Day, 27 Carlisle street, Westminster; J. Gilles, 6 Margate Road, Brixton, and A. J. McQuillin, 4 Malmsey Place, Kennington, London.

26,207. Pneumatic shuttle threading device. J. Crowther and E. O. Coulthard, 8 Stewart street, Deansgate, and W. Sharkie, 37 Lytham street, Pendleton—both in Manchester.

26,269. Tire attachments to rims. G. V. Jenkins, Wellington street, Merthyr Tydvil.

26,373. Packing for condenser tubes. A. Brunner, Julienfeld; W. Marcinka, Kritschen, and G. Pescha, Czernowitz—all near Brünn, Austria.

26,467. Improvements in vehicle wheels. R. Reid, Logan street, Polmadie, Glasgow.

26,468. Improvements in vehicle wheels. R. Reid, Logan street, Polmadie, Glasgow.

26,530. Improvements in pneumatic tire treads. H. A. B. Anthony, "Glenthorne," Thame, Oxfordshire.

26,591. Protection of rubber insulation. British Insulated and Helsby Cables, Prescot, Lancashire, and E. A. Bayles, Hillside, Helsby, Cheshire.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, MARCH 13, 1912.]

26,655. Improvements in wheel tires. P. I. Viel, 3 Place Daumesnil, Paris.

*26,657. Subaqueous audible signals. S. M. Davison, 59 Victoria street, West Somerville, Mass., U. S. A., and Chance Bros. & Co., Lighthouse Works, West Smethwick, Staffordshire.

26,706. Puncture closing patches for tires. H. Marles, 24 Essex Road, Manor Park, London.

26,755. Inflating pumps. H. W. Dover, Holyrood, St. James, Northampton.

26,795. Bag for transporting rubber. R. Rowat, 18 Watson street, Glasgow.

26,851. Tire attachment to rims. A. C. Frost, Hazelmere, Four Oaks, Warwickshire.

26,870. Smoking apparatus for rubber latex. O. Shaw and R. T. Cooke, Corbett Street Ironworks, Bradford, Manchester.

26,928. Organic sulphur compounds. L. Lilienfeld, 1 Zeltgasse, Vienna.

26,932. Process of vulcanizing. H. Dogny, and V. Henri, 32 Rue Claude Bernard, Paris.

26,977. Rubber plates on ladders. A. E. Downes, 8 Crystal avenue, Spring Bank, Hull.

*27,003. Improvements in elastic fabrics. W. Kops, 435 Riverside Drive, New York, U. S. A.

*27,028. Rubber horseshoe pads. J. A. Neil, 1008 Sixth street, N. W., and J. E. Gale, 1105 Eleventh street, N. W.—both in Washington, D. C., U. S. A.

27,222. Pneumatic cushions on vehicle wheels. F. F. Ganly, 73 Brunswick street, Weston Gorton, Manchester.

27,262. Tire inflating pumps. W. Loebinger, 133 Grosvenor Road, Highbury, London.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, MARCH 20, 1912.]

*27,288. Cases for toilet articles. J. H. Trayne, 6 Elm street, Groton, Mass., U. S. A.

*27,289. Process for coating fabrics with rubber. J. Meade, Summer street, Stoughton, Mass., U. S. A.

27,345. Signals for punctures of tires. G. Williams, "Elmhurst," Bewdley Hill, Kidderminster.

27,352. Combination of solid with pneumatic tires. H. B. Palmer, 61 Ebrington street, Plymouth.

27,413. Non-slipping treads. H. Hulot, 3 Place des Batignolles, Paris.

27,432. Rubber bands for adjusting shape of hats. A. W. & A. Burgess, Wilton street, Denton, near Manchester.

27,466. Breathing apparatus. A. B. Drager and H. and B. Drager, 53 Moislinger Allee, Lübeck, Germany.

27,553. Tire attachments to rims. J. Yule, 611 Manchester Road, Poplar, London.

27,573. Elastic hair fastenings. A. Brahn, Reichenberger-Strasse, Hohenschönhausen, Berlin.

27,613. Rubber covers for golf club handles. British Insulated and Helsby Cables, Helsby, near Warrington, and F. A. Cole, "Walmore," Dee Banks—both in Cheshire.

27,642. Rubber strips on billiard tables. H. A. Crabb, 4 Greyswood street, Streatham, and C. H. Hutchinson and A. H. F. Perl, Raymond House, Theobald's Road—both in London.

*27,677. Rubber cushions for metal railway sleepers. C. A. Miller and W. M. Carroll, Camden, Texas, U. S. A.

*27,686. Pressure gauges for pneumatic tires. R. Faries, 274 West Third street, Williamsport, Pa., U. S. A.

27,705. Erasing appliance on penholders. E. J. Kehoe, Tumut, New South Wales, Australia.

27,864. Closing punctures in pneumatic tires. E. L. Barry, 357 North End Road, Fulham, London.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, MARCH 27, 1912.]

28,015. Cushions for pneumatic tires. E. G. Gibb, Johnshaven Spinning Mills, Johnshaven, Kincardineshire.

28,080. Tire inflating valves. A. Loiseleur, 11 Rue Ste. Hélène, Lyons, France.

28,097. Improvements in fountain pens. W. H. Brecknell, 28 Meadow street, Weston-super-Mare.

*28,132. Swimming appliances. G. M. Larson, Honeyford, North Dakota, U. S. A.

28,260. Tread bands for tires. R. V. Howard, Barton-on-the-Heath, Moreton-in-the-Marsh, Gloucestershire.

28,268. Replacing tire covers. H. Morgan, Hadley, near Wellington, Shropshire.

28,321. Antiskid devices for road vehicles. S. T. Richardson and R. Price, 3a Rea street, Birmingham.

*28,336. Improvements in elastic fabrics. W. Kops, 435 Riverside Drive, New York, U. S. A.

28,375. Bed lifts for invalids. A. Skeffington, Trevose, Ulundi Road, Blackheath, London.

28,376. Controlling of flow of pulp, etc. E. H. Nutter and Minerals Separation, Ltd., 62 London Wall, London.

28,390. Rubber strips for cleaning windows of motors, etc. J. Petit, 44 Boulevard de la Rochelle, Bar le Duc, France.

28,442. Improvements in tires. C. W. G. Little, 99 Albemarle Road, Beckenham, Kent, and J. J. Steinitz, The Grand Hotel, Leicester.

28,453. Rubber coated fabric for driving belts. F. Reddaway, Cheltenham street, Pendleton, Manchester.

28,489. Mixing waste rubber with asbestos. W. E. W. Richards, 80 Great Tower street, London.

THE FRENCH REPUBLIC.

PATENTS ISSUED (with Dates of Application).

433,454 (July 17, 1911). W. J. Dunham and E. W. Peck. Pneumatic cushions for vehicles.

433,492 (August 21). L. Scaglin. Antiskid removable protection for pneumatic tires.

433,493 (August 21). G. H. N. Howes. Air chamber for pneumatic tires.

433,525 (August 23). P. Joseline (called Laroche). Wheel with connected pneumatic tires for automobiles, bicycles, etc.

433,737 (August 30). Willson & Moody. Non-bursting cover for pneumatic tires.

433,977 (September 5). A. Bailly and E. Bailly. Cover for pneumatic tires.

433,983 (September 7). P. Normand. Non-bursting pneumatic tire.

434,081 (September 9). H. L. Julien. Protective cover for solid and pneumatic tires.

434,159 (September 13). F. Power. Improvements in vehicle tires.

434,246 (September 15). H. Le Fournis. Improvement in wheels with elastic tires.

434,215 (September 14). Company styled Rauch-Gummi-Verwertungs G. m. b. H. Crude rubber and process of manufacture.

434,287 (September 15). C. Terrier. Process of repairing pneumatic tires.

434,277 (September 16). Company styled "The Vine and General Rubber Trust, Limited." Improvements in appliances for extracting rubber and other gums from plants, barks, fibers, and similar substances; as well as for cleaning crude rubber and other like substances.

434,293 (November 21, 1910). Continental Caoutchouc and Gutta Percha Co. Movable rim.

434,302 (September 16, 1911). J. Bideau. Wheel tire for vehicles.

434,313 (September 18). C. Carbon. Special cushion for preventing perforations of pneumatic tires.

434,383 (July 27). H. P. Haas. Elastic covering for vehicle wheels.

434,456 (November 26, 1910). L. Duc. Rotating heel.

434,478 (September 21, 1911). T. H. Grigg. Improvements in tires.

434,620 (September 4, 1911). O. Bayle. Antiskid protection for pneumatic tires.

434,523 (November 28, 1910). Desouches, Riasse & Duron. Process and appliances for the manufacture of artificial rubber or similar elastic substance.

434,632 (September 20, 1911). L. Bonnouvrier. Elastic tire for vehicles.

434,587 (September 26). Badische Anilin & Soda Fabrik. Process for production of substances having the qualities of rubber.

[NOTE.—Printed copies of specifications of French patents can be obtained from R. Bobet, Ingénieur-Conseil, 16 avenue de Villiers, Paris, at 50 cents each, postpaid.]

THE GERMAN EMPIRE.

PATENTS ISSUED (with dates of validity).

244,971 (from September 1, 1910). C. Lawes Wittewronge, Harpenden, England. Moulding of chopped vulcanized rubber.

244,972 (from December 20, 1910). New Eccles Rubber Works, Eccles, England. Apparatus for manufacture of hollow rubber balls.

245,552 (from January 27, 1911). Johann Meffert, Framersheim. Apparatus for cleaning old hose pipes and similar articles.

245,640 (from June 25, 1909). W. H. Hyatt, London, and Percy Douglas Penn, South Croydon, England. Regeneration of rubber by use of heat and steam.

245,910 (from September 2, 1909). F. J. Gleason, Walpole, Mass., U. S. A. Improved process of manufacturing hollow rubber articles.

THE KINGDOM OF BELGIUM.

PATENTS PUBLISHED.

241,438 (1912). H. Carroll, Boulevard Pereire 6 bis, Paris. Regeneration of old rubber.

241,242 (1912). Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld. Process for production of erythrene.

241,272 (1912). G. Reynaud, Rue Salneuve 5, Paris. Process for manufacture of rubber.

241,249 (1912). Economic Rubber Washing Machine Company, Limited, London. Machine for treating rubber.

242,064 (1912). Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld. Process for manufacture of erythrene and isoprene.

238,912 (1912). The Vine and General Rubber Trust, Limited, London. Improvements in extraction of rubber and gums from plants, etc.; as well as for cleaning rubber and like substances.

242,283 (1912). A. Heinemann, 10 Summer Terrace, London. Improvements in preparation of synthetic rubber.

Review of the Crude Rubber Market.

THE later days of March witnessed the culmination of the upward movement which had been nearly a fortnight in progress and which had brought up the London price of fine Pará from 4*s.* 10½*d.* on March 15, to 5*s.* 2*d.* on March 27, the latter being the highest price attained for many months. The causes of this advance formed the subject of discussion from the various points of view of sellers and buyers.

On the one side it was argued that the absorption through the London sales of nearly 2,000 tons within a month, indicated the existence of a healthy demand from consumption, sufficient to keep prices at their new level for the immediate future, while on the other side it was urged that the doubling of Malayan exports as compared with those of the first three months of 1911 was calculated to depress prices, while the more rubber had been recently sold, the less would be wanted in the near future.

Consumers evidently not being encouraged to follow rubber above the 5*s.* mark and speculators also holding aloof from operations, the prices had receded by March 29 to 4*s.* 11½*d.*; remaining about 4*s.* 11*d.* till the middle of April, and reaching by 19th 4*s.* 10½; by 25th 4*s.* 9*d.*; and by 27th (at time of writing) 4*s.* 8½*d.* Thus the London price of fine hard Pará is about 2*d.* lower than it was at the middle of March, before the commencement of the recent speculative movement.

At the London auctions of April 2 and 3, about 500 tons of plantation rubber were sold, the second day's sale displaying increased animation, resulting in a recovery of 1*d.* per pound from the rates previously ruling in the open market. During the sales of April 16 and 17, about 300 tons plantation rubber were disposed of at prices unchanged from those previously current.

The month of April has thus been a time of limited operations on the part of buyers and sellers both here and in Europe. The position of consumption is, of course, the predominant factor in the future of the rubber market, in which connection the record demand for tires is regarded as imparting strength to the situation.

NEW YORK QUOTATIONS.

FOLLOWING are the quotations at New York for Pará grades, one year ago, one month ago and April 29—the current date.

PARA.	May 1, '11.	Apr. 1, '12.	Apr. 29, '12.
Islands, fine, new	118@120	117@118	110@111
Islands, fine, old	120@121	119@120	112@113
Upriver, fine, new	126@127	122@122	112@113
Upriver, fine, old	130@131	124@125	115@116
Islands, coarse, new	61@ 62	67@ 68	63@ 64
Islands, coarse, old	none here	none here	———
Upriver, coarse, new	89@ 90	98½@ 99	93@ 94
Upriver, coarse, old	92@ 93	none here	———
Cametá	75@ 76	72@ 73	67@ 68
Caucho (Peruvian) ball	94@ 95	98@ 99	93@ 94
Caucho (Peruvian) sheet	none here	none here	———
PLANTATION PARA.			
Fine smoked sheet	140@141	139@140	126@127
Fine pale crepe	140@141	138@139	125@126
Fire sheets and biscuits	130@131	136@137	119@120
CENTRALS.			
Esmeralda, sausage	88@ 89	97@ 98	92@ 93
Guayaquil, strip	none here	none here	———
Nicaragua, scrap	87@ 88	96@ 97	91@ 92
Panama	none here	none here	———
Mexican, scrap	86@ 87	95@ 96	91@ 92
Mexican, slab	none here	none here	———
Mangabeira, sheet	none here	67@ 68	———
Guayule	58@ 59	69@ 70	———
Balata, sheet	83@ 84	90@ 91	85@ 86
Balata, block	56@ 57	62@ 63	———
AFRICAN.			
Lopori ball, prime	115@118	122@123	
Lopori, strip, prime	none here	none here	
Aruwimi	112@113	none here	
Upper Congo ball, red	109@110	none here	
Ikelemba	none here	none here	
Sierra Leone, 1st quality	100@102	109@110	
Massai, red	100@102	111@112	
Soudan, Niggers	none here	none here	
Cameroon ball	76@ 77	91@ 92	
Bengueia	70@ 71	78@ 79	
Madagascar, pinky	87@ 88	none here	
Accra, flake	38@ 39	28@ 29	
EAST INDIAN.			
Assam	none here	none here	———
Pontianak	6¼@6½	6¾@ —	———
Borneo	none here	none here	———

Africans are neglected owing to low prices ruling for Pará.

Late Pará cables quote:

Per Kilo.		Per Kilo.
Islands, fine 5$050	Upriver, coarse	—
Islands, coarse 2$700	Upriver, fine	—
	Exchange	16¼*d.*

Latest Manáos advices:

Upriver, fine 5$950	Exchange 16 9/32*d.*
Upriver, coarse 4$350	

New York.

In regard to the financial situation, Albert B. Beers (broker in crude rubber and commercial paper, No. 68 William street, New York) advises as follows: "In the matter of commercial paper, the same conditions have prevailed during April as in March, the demand from banks both in town and out being quite good at 4½@5 per cent. for the best rubber names, and 5½@6 per cent. for those not so well known."

NEW YORK PRICES FOR MARCH (NEW RUBBER).

	1912.	1911.	1910.
Upriver, fine	$1.11@1.23	$1.45@1.66	$2.09@2.58
Upriver, coarse	.93@ .99	1.08@1.18	1.30@1.70
Islands, fine	1.08@1.18	1.30@1.56	2.03@2.45
Islands, coarse	.63@ .67	.62@ .90	.90@1.07
Cametá	.66@ .72	.79@ .92	.95@1.28

African Rubbers.

NEW YORK STOCKS (IN TONS).

March 1, 1911	111	October 1, 1911	67
April 1	98	November 1	45
May 1	98	December 1	60
June 1	90	January 1, 1912	58
July 1	90	February 1	150
August 1	90	March 1	90
September 1	112	April 1	80

Rubber Scrap Prices.

LATE NEW YORK QUOTATIONS.—Prices paid by consumers for carload lots, per pound—are in some cases slightly higher.

	May 1.
Old rubber boots and shoes—domestic	9½@ 9⅝
Old rubber boots and shoes—foreign	9⅛@ 9¼
Pneumatic bicycle tires	4½@ 4¾
Automobile tires	9 @ 9¼
Solid rubber wagon and carriage tires	9¼@ 9¾
White trimmed rubber	11 @11½
Heavy black rubber	4¾@ 5
Air brake hose	5 @ 5⅛
Garden hose	1½@ 1⅝
Fire and large hose	2⅛@ 2¼
Matting	⅞@ 1

Statistics of Para Rubber (Excluding Caucho).

NEW YORK.

	Fine and Medium.	Coarse.	Total 1912.	Total 1911.	Total 1910.
Stocks, February 28.....*tons*	252	27 =	279	165	186
Arrivals, March	1,332	756 =	2,088	1,054	3,211
Aggregating	1,584	783 =	2,367	1,219	3,397
Deliveries, March	1,485	772 =	2,257	823	3,117
Stocks, March 31.....	99	11 =	110	396	280

	PARA.			ENGLAND.		
	1912.	1911.	1910.	1912.	1911.	1910.
Stocks, February 28, *tons*	3,240	3,245	465	1,055	1,385	510
Arrivals, March	3,115	2,955	3,890	1,183	1,594	632
Aggregating	6,355	6,200	4,355	2,238	2,979	1,142
Deliveries, March	3.625	2,570	3,520	1,408	1,114	602
Stocks, March 31.....	2,730	3,630	835	830	1,865	540

	1912.	1911.	1910.
World's visible supply, March 31.....*tons*	5,266	7,144	3,737
Pará receipts, July 1 to March 31.....	25,765	24,670	26,895
Pará receipts of caucho, same dates.....	4,710	4,720	5,215
Afloat from Pará to United States, Mar. 31	526	183	117
Afloat from Pará to Europe, March 31....	1,070	1,070	1,965

Rubber Stock at Para.

Stock for January 31 showed an increase caused by heavier arrivals, while that of February 29 shows a slight decrease. The stock of March 31 displayed a further reduction.

January 31, 1911....*tons*	2,085	September 30, 1911..*tons*	3,102
February 28	3,787	October 31	3,320
March 31	4,214	November 30	3,050
April 30	5,104	December 31	2,675
May 31	5,350	January 31, 1912.....	3,370
June 30	4,545	February 29	3,240
July 31	3,884	March 31	2,730
August 31	3,450		

Liverpool.

WILLIAM WRIGHT & Co. [April 1:]

Fine Pará.—A strong and active demand has been experienced. Prices advanced from 4*s.* 7¾*d.* to 5*s.* 2¼*d.*, but declined in the last few days to 4*s.* 10½*d.* America has again been buyer of very large quantities of rubber spot and afloat, practically clearing out all the old reserve stock held here. Shipments to New York are about 500 tons, and a considerable further quantity is in course of shipment. Closing value: Hard Fine, 4*s.* 10½*d.*; Island, 4*s.* 9*d.*

WEEKLY MOVEMENT OF LONDON PRICES.

[IN SHILLINGS AND PENCE PER POUND.]

July 7, 1911.....	4/2½	December 8, 1911.....	4/5½
July 14	4/5½	December 15.....	4/4½
July 21	4/7	December 22.....	4/4
July 28	4/8	December 29.....	4/3½
August 4	4/7½	January 5, 1912.....	4/4½
August 11	4/7½	January 12.....	4/5½
August 18	4/7½	January 19.....	4/5½
August 25	4/10½	January 26.....	4/8
September 1	4/8½	February 2.....	4/7
September 8	4/9	February 9.....	4/6½
September 15.....	5/	February 16.....	4/6¼
September 22.....	4/10½	February 23.....	4/7½
September 29.....	4/8	March 1.....	4/7½
October 6.....	4/7	March 8.....	4/9
October 13	4/5	March 15.....	4/10½
October 20	4/6½	March 22.....	5/1½
October 27.....	4/4	March 29	4/11½
November 3.....	4/3	April 5.....	4/11
November 10.....	4/4½	April 12.....	4/11
November 17.	4/3	April 19.....	4/10¼
November 24.....	4/3½	April 25.....	4/9
December 1.....	4/4½		

IMPORTS FROM PARA AT NEW YORK.

[*The Figures Indicate Weight in Pounds.*]

APRIL 5.—By the steamer *Aidan*, from Manáos and Pará.

	Fine.	Medium.	Coarse.	Caucho.	TOTAL.
New York Commercial Co...	162,900	48,200	107,500	249,700=	568,300
Arnold & Zeiss	118,200	26,000	196,400	205,100=	545,700
General Rubber Co.....	187,900	35,600	87,900	22,600=	334,000
Meyer & Brown.....	45,200	9,700	24,200	38,900=	118,000
Henderson & Korn.....	10,700	700	13,900	33,000=	58,300
Hagemeyer & Brunn.....	12,500	5,400	7,300	700=	25,900
H. A. Astlett Co.....	17,800	2,800	.....	3,800=	24,400
G. Amsinck & Co.....	400	.....	5,900	.....=	6,300
Total	555,600	128,400	443,100	553,800=	1,680,900

APRIL 16.—By the steamer *Boniface*, from Manáos and Pará.

New York Commercial Co...	120,200	27,200	89,200	152,100=	298,700
Arnold & Zeiss	58,900	13,200	152,500	24,600=	249,200
General Rubber Co.....	103,800	32,000	40,900	16,900=	193,600
Meyer & Brown.....	24,700	1,700	30,400	.....=	56,800
De Lagotellerie & Co.....	11,800	300	17,800	.....=	29,900
Hagemeyer & Brunn.....	12,900	1,400	11,200	.....=	25,500
Total	332,300	75,800	342,000	93,600=	843,700

APRIL 25.—By the steamer *Clement*, from Manáos and Pará:

Arnold & Zeiss.....	124,600	37,700	181,600	79,500=	423,400
New York Commercial Co..	80,200	34,200	75,300	30,400=	220,100
Meyer & Brown.....	83,500	6,700	24,900	65,500=	180,600
Laurence Johnson & Co....	22,400	.....	5,900	55,400=	83,700
General Rubber Co.....	45,000	6,400	1,000	.....=	52,400
De Lagotellerie & Co.....	11,100	1,400	19,100	.....=	31,600
Henderson & Korn.....	5,700	.....	14,500	.....=	20,200
Hagemeyer & Brunn.....	5,400	300	700	600=	7,000
G. Amsinck & Co.....	2,100	.....	2,600	1,700=	6,400
Total	380,000	86,700	325,600	233.100=	1.025.400

PARA RUBBER VIA EUROPE.

		POUNDS.
MARCH 28.—By the *Kroonland*=Antwerp:		
Meyer & Brown (Fine).....	9,000	
MARCH 28.—By the *Batavia*=Hamburg:		
Ed. Maurer (Fine)	9,000	
APRIL 1.—By the *Canadian*=Liverpool:		
General Rubber Co. (Fine).....	135,000	
Robinson & Co. (Fine).....	35,000	
Henderson & Korn (Fine).....	13,500	
In transit (Fine).....	45,000	228,500
APRIL 6.—By the *Baltic*=Liverpool:		
New York Commercial Co. (Fine).....		25,000
APRIL 6.—By the *Pennsylvania*=Hamburg:		
New York Commercial Co. (Fine)	7,000	
Robert Badenhop (Fine).....	5,500	
Wallace L Gough Co. (Fine)....	5,000	17,500
APRIL 8.—By the *Caronia*=Liverpool:		
Arnold & Zeiss (Fine).....	115,000	
New York Commercial Co. (Fine)	60,000	
Raw Products Co. (Coarse).....	34,000	209,000
APRIL 18.—By the *Cevic*=Liverpool:		
New York Commercial Co. (Fine)	56,000	
General Rubber Co. (Fine).....	30,000	86,000
APRIL 15.—By the *Carmania*=Liverpool:		
New York Commercial Co. (Fine)	125,000	
Arnold & Zeiss (Fine).....	11,000	
In transit (Fine).....	68,000	204,000
APRIL 16.—By the *President Lincoln*=Hamburg:		
Ed. Maurer (Fine).....	7,000	
Meyer & Brown (Fine).....	7,000	
New York Commercial Co. (Fine)	2,000	16,000
APRIL 20.—By the *Celtic*=Liverpool:		
New York Commercial Co. (Fine)	34,000	
Henderson & Korn (Caucho)....	30,000	
New York Commerc'l Co. (Caucho)	8,000	72,000
APRIL 22.—By the *Bohemian*=Liverpool:		
New York Commercial Co. (Fine).....		40,000

OTHER NEW YORK ARRIVALS.

CENTRALS.

[*This sign, in connection with imports of Centrals, denotes Guayule rubber.]

		POUNDS.
MARCH 25.—By *El Mundo*=Galveston:		
Charles T. Wilson	*20,000	
MARCH 25.—By the *African Prince*=Bahia:		
J. H. Rossbach & Bros.	*75,000	
Adolph Hirsch & Co.....	*11,000	*86,000
MARCH 26.—By the *Allianca*=Colon:		
E. Nelson Tibbals & Co.....	5,000	
W. R. Grace & Co.....	3,000	
Mecke & Co.	2,500	
Isaac Brandon & Bros.	2,500	
Dumarest Bros. & Co.....	2,000	
R. G. Barthold	1,500	
Piza Nephews & Co.....	1,000	
Wessels, Kulenkampff & Co....	1,000	18,500
MARCH 26.—By the *Rochambeau*=Havre:		
In Transit		22,500
MARCH 27.—By the *Creole*=New Orleans:		
Meyer & Brown	3,500	
Robinson & Co.	2,500	
G. Amsinck & Co.....	1,500	
A. N. Rotholz	1,000	8,500
MARCH 27.—By the *Guantanamo*=Tampico:		
Ed. Maurer *100,000		
N. Y. Commercial Co.....	*67,000	
Arnold & Zeiss	*22,500	
For Europe	*90,000	*279,500
MARCH 28.—By the *Thames*=Colombia:		
Isaac Brandon & Bros.	11,500	
G. Amsinck & Co.....	8,000	
Maitland, Coppell & Co.....	5,000	24,500
MARCH 29.—By the *Minnetonka*=Colombia:		
Arnold & Zeiss		11,000
MARCH 29.—By the *Mexico*=Vera Cruz:		
Laurence Johnson & Co.....	4,500	
J. W. Wilson & Co.....	3,500	
W. L. Wadleigh	3,000	
Harburger & Stack	1,500	
H. Marquardt & Co.	1,000	13,500

APRIL 1.—By the *Vigilancia*=Tampico:

N. Y. Commercial Co.	*155,000	
Ed. Maurer	*70,000	
Arnold & Zeiss	*35,000	*260,000

APRIL 2.—By the *Minnehaha*=London:

Arnold & Zeiss	115,000	
General Rubber Co.	11,500	
Adolph Hirsch & Co.	45,000	171,500

APRIL 2.—By the *Albingia*=Colombia:

Maitland, Coppell & Co.	15,000	
R. Castillo & Co.	4,000	
A. de Brigard	2,500	
Kunhardt & Co.	1,000	22,500

APRIL 3.—By the *Prinz Eitel Friedrich*= Colon:

G. Amsinck & Co.	9,000	
Otto Gerdau Co.	5,000	
J. Sambrada & Co.	3,500	
Andean Trading Co.	2,500	
Pablo Calvet & Co.	2,500	
Dumarest Bros. & Co.	1,500	
Isaac Brandon & Bros.	1,500	
W. R. Grace & Co.	1,000	
Frank Lapiedra	1,000	
Wessels, Kulenkampff & Co.	1,000	28,500

APRIL 4.—By the *Verdi*=Bahia:

Adolph Hirsch & Co.	225,000	
J. H. Rossbach & Bros.	25,000	250,000

APRIL 4.—By the *Bermuda*=Hamburg:

Ed. Maurer	*34,000	
Adolph Hirsch & Co.	30,000	64,000

APRIL 4.—By the *Proteus*=New Orleans:

Manhattan Rubber Mfg. Co.	7,000	
G. Amsinck & Co.	2,500	
Robinson & Co.	2,000	
T. N. Morgan	2,000	13,500

APRIL 6.—By the *Esperanza*=Frontera:

E. Steiger & Co.	9,000	
Harburger & Stack	4,000	
General Export Comm. Co.	5,000	
W. L. Wadleigh	3,000	
Neuss, Hesslein & Co.	2,000	
Hermann Kluge	1,000	
For Europe	9,000	33,000

APRIL 8.—By the *Amerika*=Hamburg:

Arnold & Zeiss		80,000

APRIL 8.—By the *Santiago*=Tampico:

N. Y. Commercial Co.	*135,000	
Arnold & Zeiss	*55,000	
Ed. Maurer	*45,000	
For Europe	*125,000	*360,000

APRIL 8.—By the *Cevic*=Liverpool:

General Rubber Co.	9,000	
Adolph Hirsch & Co.	7,000	16,000

APRIL 9.—By *El Sud*=Galveston:

Charles T. Wilson		*15,000

APRIL 9.—By the *Minnewaska*=London:

Arnold & Zeiss		11,500

APRIL 10.—By the *Carrillo*=Colon:

G. Amsinck & Co.	3,500	
A. Rosenthal & Sons	3,500	
Andean Trading Co.	2,500	
Isaac Brandon & Bros.	2,000	
Graham, Hinkley & Co.	2,000	
Gillespie Bros. & Co.	1,000	
Wessels, Kulenkampff & Co.	1,000	15,500

APRIL 10.—By the *Olympic*=London:

Arnold & Zeiss		22,500

APRIL 11.—By the *Trent*=Colombia:

G. Amsinck & Co.	11,500	
Maitland, Coppell & Co.	9,000	
A. M. Capen's Sons	8,000	
J. Sambrada & Co.	6,000	
A. Held	5,000	
Isaac Brandon & Bros.	3,500	
Kunhardt & Co.	2,500	
Roldau & Van Sickle	1,000	
Mecke & Co.	1,000	47,500

APRIL 12.—By the *Morro Castle*=Frontera:

E. Steiger & Co.	9,000	
Harburger & Stack	7,000	
General Export Comm. Co.	4,000	
Laurence Johnson & Co.	3,500	
Graham, Hinkley & Co.	3,000	
H. Marquardt & Co.	2,500	
P. V. Rubio & Co.	2,000	31,000

APRIL 12.—By the *Creole*=New Orleans:

G. Amsinck & Co.	3,500	
Wessels, Kulenkampff & Co.	2,500	
Eggers & Heinlein	2,000	8,000

APRIL 13.—By the *Panama*=Colon:

G. Amsinck & Co.	36,500	
Laurence Johnson & Co.	4,500	
American Trading Co.	4,000	
Dumarest Bros. & Co.	3,000	
Pablo Calvet & Co.	3,000	
Wessels, Kulenkampff & Co.	2,500	
Isaac Brandon & Bros.	2,000	
George Siefelle & Co.	1,500	
Lanman & Kemp	1,500	
Roldau & Van Sickle	1,500	
Gillespie Bros. & Co.	1,000	
J. Sambrada & Co.	1,500	
Meyer & Hecht	1,000	63,500

APRIL 16.—By *El Mundo*=Galveston:

Continental-Mexican Rubber Co.		*80,000

APRIL 16.—By the *President Lincoln*=Hamburg:

Ed. Maurer		*11,500

APRIL 16.—By the *Comus*=New Orleans:

G. Amsinck & Co.	3,500	
Manhattan Rubber Mfg. Co.	2,500	
Meyer & Brown	2,500	
Wessels, Kulenkampff & Co.	2,000	10,500

APRIL 16.—By the *Seguranca*=Tampico:

Ed. Maurer	*135,000	
Arnold & Zeiss	*70,000	
N. Y. Commercial Co.	*70,000	
For Hamburg	*45,000	*320,000

APRIL 17.—By the *Prinz August Wilhelm*= Colon:

G. Amsinck & Co.	8,000	
Isaac Brandon & Bros.	3,000	
Schutte Bunemann & Co.	2,500	
A. Held	2,000	
Andean Trading Co.	1,500	
Caballero & Blanco	1,500	
J. Sambrada & Co.	1,000	
H. Marquardt & Co.	1,000	20,500

APRIL 20.—By *El Norte*=Galveston:

Continental-Mexican Rubber Co.	*77,000	
Charles T. Wilson	*20,000	*97,000

APRIL 20.—By the *Monterey*=Vera Cruz:

E. Nelson Tibbals & Co.	2,500	
J. W. Wilson & Co.	2,000	
Mecke & Co.	500	5,000

APRIL 22.—By the *Bayamo*=Tampico:

N. Y. Commercial Co.	*135,000	
Arnold & Zeiss	*35,000	
Ed. Maurer	*100,000	
For Europe	*55,000	*325,000

APRIL 22.—By the *Rochambeau*=Havre:

In Transit		45,000

APRIL 22.—By the *Westerwald*=Colon:

G. Amsinck & Co.	9,000	
Andean Trading Co.	2,000	
N. Y. Commercial Co.	2,000	13,000

APRIL 24.—By the *Byron*=Bahia:

Adolph Hirsch & Co.		90,000

APRIL 24.—By *El Dia*=Galveston:

Continental-Mexican Rubber Co.		*70,000

APRIL 24.—By the *Oruba*=Columbia:

Maitland, Coppell & Co.	9,000	
G. Amsinck & Co.	8,000	
A. M. Capen's Sons	5,000	
R. Castillo & Co.	3,500	
Kunhardt & Co.	3,500	
A. Held	2,500	
Caballero & Blanco	2,500	
J. Sambrada & Co.	1,500	
Isaac Brandon & Bros.	1,500	
Mecke & Co.	1,000	
Dumarest Bros. & Co.	1,000	39,000

AFRICAN.

		POUNDS.
MARCH 25.—By the *Celtic*=Liverpool:		
Robinson & Co.	80,000	
James T. Johnstone	35,000	115,000
MARCH 26.—By the *Batavia*=Hamburg:		
George A. Alden & Co.	20,000	
Henderson & Korn	34,000	
Ed. Maurer	35,000	
Meyer & Brown	22,500	
Arnold & Zeiss	25,000	
Rubber Trading Co.	9,000	
James T. Johnstone	13,500	
Wallace L. Gough Co.	5,500	164,500
MARCH 28.—By the *Kroonland*=Antwerp:		
Meyer & Brown	11,500	
Henderson & Korn	5,500	17,000
MARCH 29.—By the *President Grant*=Hamburg:		
General Rubber Co.	45,000	
George A. Alden & Co.	22,500	
Henderson & Korn	22,500	
Meyer & Brown	22,500	
Robert Badenhop	11,000	
Wallace L. Gough Co.	5,500	129,000
APRIL 1.—By the *La Savoie*=Havre:		
George A. Alden & Co.		7,000
APRIL 1.—By the *Canadian*=Liverpool:		
General Rubber Co.	65,000	
Ed. Maurer	45,000	
Henderson & Korn	11,500	
Arnold & Zeiss	11,000	
Robinson & Co.	5,500	138,000
APRIL 3.—By the *Finland*=Antwerp:		
Meyer & Brown	34,000	
Arnold & Zeiss	70,000	
Ed. Maurer	13,500	117,500
APRIL 3.—By the *Noordam*=Rotterdam:		
Meyer & Brown		22,500
APRIL 4.—By the *Bermuda*=Hamburg:		
Ed. Maurer	11,500	
Rubber Trading Co.	5,500	
Robert Badenhop	5,500	
George A. Alden & Co.	1,000	23,500

APRIL 5.—By the *Hudson*=Havre:

General Rubber Co.	56,000	
Meyer & Brown	30,000	86,000

APRIL 6.—By the *Baltic*=Liverpool:

James T. Johnstone	30,000	
Ed. Maurer	11,000	
George A. Alden & Co.	4,500	45,500

APRIL 6.—By the *Pennsylvania*=Hamburg:

George A. Alden & Co.	50,000	
Ed. Maurer	50,000	
General Rubber Co.	15,000	
Wallace L. Gough Co.	11,500	
Robinson & Co.	10,000	
James T. Johnstone	20,000	156,500

APRIL 8.—By the *Caronia*=Liverpool:

Robinson & Co.	60,000	
George A. Alden & Co.	40,000	
Arnold & Zeiss	25,000	
General Rubber Co.	13,500	
Raw Products Co.	11,500	150,000

APRIL 8.—By the *Minnewaska*=London:

George A. Alden & Co.	15,000	
James T. Johnstone	2,500	17,500

APRIL 8.—By the *Amerika*=Hamburg:

Arnold & Zeiss	30,000	
George A. Alden Co.	13,500	
Wallace L. Gough Co.	11,500	
Meyer & Brown	11,000	
Rubber Trading Co.	7,000	
Henderson & Korn	5,500	
Ed. Maurer	6,000	
L. Blitz	4,500	89,000

APRIL 8.—By the *Cevic*=Liverpool:

George A. Alden & Co.	90,000	
General Rubber Co.	98,000	
Ed. Maurer	56,000	
Robinson & Co.	35,000	
James T. Johnstone	13,500	
Rubber Trading Co.	7,000	
Earle Bros.	7,000	
A. W. Brunn	4,500	
Henderson & Korn	11,500	322,500

APRIL 9.—By the *Vaderland*=Antwerp:

Meyer & Brown	27,000	
L. Blitz	5,500	32,500

APRIL 9.—By the *Germania*=Lisbon:

Arnold & Zeiss	15,000	
Wallace L. Gough Co.	11,000	
General Rubber Co.	9,000	35,500

APRIL 13.—By the *Victorian*=Liverpool:

General Rubber Co.	158,000	
Arnold & Zeiss	90,000	
Ed. Maurer	11,500	259,500

APRIL 13.—By the *Filomachi*=Lisbon:

General Rubber Co.	100,000	
Robert Badenhop	5,500	105,500

APRIL 15.—By the *Carmania*=Liverpool:

General Rubber Co.	60,000	
Ed. Maurer	45,000	
Robinson & Co.	22,500	127,500

APRIL 16.—By the *Lapland*=Antwerp:

Rubber Trading Co.	15,000	
Arnold & Zeiss	11,500	
Meyer & Brown	7,000	33,500

APRIL 16.—By the *President Lincoln*=Hamburg:

George A. Alden & Co.	100,000	
Ed. Maurer	33,500	
General Rubber Co.	22,500	
Henderson & Korn	11,500	
Raw Products Co.	4,500	
James T. Johnstone	7,000	
Robert Badenhop	3,000	182,000

APRIL 16.—By the *Niagara*=Havre:

Arnold & Zeiss	80,000	
General Rubber Co.	45,000	
Meyer & Brown	30,000	155,000

APRIL 17.—By the *Chicago*=Havre:

George A. Alden & Co.	30,000	
Rubber Trading Co.	9,000	
Ed. Maurer	15,000	
General Rubber Co.	8,000	62,000

APRIL 20.—By the *Celtic*=Liverpool:

George A. Alden & Co.	25,000	
James T. Johnstone	15,000	
Ed. Maurer	11,500	
Robinson & Co.	7,000	58,500

APRIL 22.—By the *Bohemia*=Liverpool:

Ed. Maurer	18,500	
Wallace L. Gough Co.	4,500	23,000

APRIL 23.—By the *Gevlades*=Lisbon:

General Rubber Co.	78,000	
Wallace L. Gough Co.	7,000	85,000

APRIL 24.—By the *Kroonland*=Antwerp:

Arnold & Zeiss		34,000

EAST INDIAN.

[*Denotes plantation rubber.]

	POUNDS.
MARCH 26.—By the *Rochambeau*=Havre:	
in transit	*45,000
MARCH 28.—By the *Kroonland*=Antwerp:	
Meyer & Brown	*30,000

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Venezuelan Block Balata

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MARCH 29.—By the *Minnetonka*=London:

General Rubber Co.	*350,000	
Arnold & Zeiss	*115,000	
N. Y. Commercial Co.	*70,000	
Meyer & Brown	*40,000	
Ed. Maurer	*45,000	
Robinson & Co.	*13,500	
L. Littlejohn & Co.	*11,500	
Raw Products Co.	*7,000	
General Rubber Co.	90,000	
Charles T. Wilson	11,500	753,500

MARCH 29.—By the *President Grant*=Hamburg:

Meyer & Brown		22,500

APRIL 2.—By the *Finland*=Antwerp:

Meyer & Brown	*30,000	
Arnold & Zeiss	*11,000	*41,000

APRIL 2.—By the *Minnehaha*=London.

General Rubber Co.	*275,000	
Arnold & Zeiss	*70,000	
James T. Johnstone	*45,000	
Meyer & Brown	*40,000	
Ed. Maurer	*25,000	
Henderson & Korn	*7,000	
General Rubber Co.	35,000	497,000

APRIL 3.—By the *Aragonia*=Singapore:

Ed. Maurer	*22,500	
Wallace L. Gough Co.	*5,000	*27,500

APRIL 5.—By the *Neidenfels*=Colombo:

Meyer & Brown	*75,000	
N. Y. Commercial Co.	*65,000	
Robert Badenhop	*7,000	*147,000

APRIL 9.—By the *Minnewaska*=London:

N. Y. Commercial Co.	*195,000	
Ed. Maurer	*55,000	
General Rubber Co.	*34,000	
Meyer & Brown	*45,000	
Arnold & Zeiss	*20,000	
James T. Johnstone	*13,500	
Henderson & Korn	*11,500	
In transit	*45,000	
Robinson & Co.	30,000	
General Rubber Co.	40,000	489,000

APRIL 9.—By the *Vaderland*=Antwerp:

Meyer & Brown	*60,000	
Arnold & Zeiss	*11,000	*71,000

APRIL 10.—By the *Rheinfels*=Colombo:

Meyer & Brown	*100,000	
New York Commercial Co.	*45,000	
Ed. Maurer	*9,000	
H. W. Peabody & Co.	*7,000	*161,000

APRIL 10.—By the *Olympic*=London:

Arnold & Zeiss	*15,000	
New York Commercial Co.	*7,000	
General Rubber Co.	*3,500	*25,500

APRIL 15.—By the *Shimosa*=Singapore:

L. Littlejohn & Co.	*25,000	
Otto Isenstein & Co.	13,500	
Ed. Maurer	25,000	
L. Littlejohn & Co.	18,000	81,500

APRIL 16.—By the *Lapland*=Antwerp:

Meyer & Brown	*56,000	
Robinson & Co.	*9,000	*65,000

APRIL 16.—By the *Kabinga*=Colombo:

Meyer & Brown	*80,000	
New York Commercial Co.	*30,000	
Ed. Maurer	*13,500	
Arnold & Zeiss	*11,500	
Robert Badenhop	*3,000	*138,000

APRIL 16.—By the *President Grant*=Hamburg:

Ed. Maurer		13,500

APRIL 17.—By the *Rotterdam*=Rotterdam:

Arnold & Zeiss	22,500	
Wallace L. Gough Co.	4,500	
Manhattan Rubber Mfg. Co.	3,500	30,500

APRIL 18.—By the *Mesaba*=London:

Ed. Maurer	*100,000	
New York Commercial Co.	*80,000	
General Rubber Co.	*90,000	
James T. Johnstone	*9,000	
Wallace L. Gough Co.	*9,000	
Meyer & Brown	*4,500	*292,500

APRIL 23.—By the *Baratose*=Colombo:

Meyer & Brown		*40,000

APRIL 24.—By the *Kroonland*=Antwerp:

Meyer & Brown		*65,000

GUTTA-JELUTONG.

POUNDS.

MARCH 26.—By the *Batavia*=Hamburg:

Haebler & Co.		200,000

APRIL 3.—By the *Aragonia*=Singapore:

L. Littlejohn & Co.	225,000	
Haebler & Co.	375,000	600,000

APRIL 4.—By the *Bermuda*=Hamburg:

Haebler & Co.		350,000

APRIL 8.—By the *Cevic*=Liverpool:

George A. Alden & Co.		9,000

APRIL 15.—By the *Shimosa*=Singapore:

L. Littlejohn & Co.	650,000	
Wallace L. Gough Co.	300,000	
Haebler & Co.	225,000	
W. R. Russell & Co.	100,000	1,275,000

APRIL 18.—By the *Pathan*=Singapore:

L. Littlejohn & Co.	575,000	
Haebler & Co.	325,000	
Wallace L. Gough Co.	200,000	1,100,000

GUTTA-PERCHA.

APRIL 3.—By the *Aragonia*=Singapore:

Haebler & Co.		22,500

APRIL 4.—By the *Bermuda*=Hamburg:

Robert Soltau & Co.		19,000

APRIL 8.—By the *Cevic*=Liverpool:

Earle Bros.		7,000

APRIL 18.—By the *Pathan*=Singapore:

L. Littlejohn & Co.		37,000

BALATA.

POUNDS.

MARCH 26.—By the *Mayaro*=Trinidad:

Frame & Co.		3,000

MARCH 29.—By the *President Grant*=Hamburg:

George A. Alden & Co.		11,000

APRIL 4.—By the *Bermuda*=Hamburg:

Earle Brothers		9,000

APRIL 9.—By the *Minnewaska*=London:

Ed. Maurer		15,000

APRIL 10.—By the *Trent*=Colon:

Bartling & DeLeon		6,500

APRIL 12.—By the *Crown of Navarre*=Bolivar:

Yglesias Lobo & Co.	5,500	
American Trading Co.	3,000	
Ed. Maurer	2,000	
Middleton & Co.	1,500	12,000

BOSTON ARRIVALS.

POUNDS.

MARCH 1.—By the *Afghan Prince*=Singapore:

State Rubber Co. (East Indian)	*25,000	
State Rubber Co. (Jelutong)	135,000	
L. Littlejohn & Co. (Jelutong)	110,000	270,000

MARCH 10.—By the *Dacre Castle*=Singapore:

State Rubber Co. (East Indian)	*22,500	
Wallace L. Gough Co. (Jelutong)	110,000	
L. Littlejohn & Co. (Jelutong)	150,000	282,500

MARCH 25.—By the *Ivernia*=Liverpool:

Arnold & Zeiss (Africans)		33,500

CUSTOM HOUSE STATISTICS.

PORT OF NEW YORK—MARCH, 1912.

Imports:	Pounds.	Value.
India-rubber	11,682,987	$9,850,888
Balata	33,854	17,584
Guayule	799,216	371,367
Gutta-percha	10,344	5,722
Gutta-jelutong (Pontianak)	4,136,300	217,839
Total	16,662,701	$10,463,400
Exports:		
India-rubber	26,814	$18,891
Balata	.....	.....
Guayule	2,227	1,114
Gutta-percha	.....	.....
Reclaimed rubber	53,292	8,498
Rubber scrap, imported	1,339,602	$113,737
Rubber scrap, exported	455,504	51,434

EXPORTS OF INDIA-RUBBER FROM PARA FOR MARCH, 1912, (IN KILOGRAMS).

	NEW YORK.					EUROPE.					
EXPORTERS.	Fine.	Medium.	Coarse.	Caucho.	TOTAL.	Fine.	Medium.	Coarse.	Caucho.	TOTAL.	TOTAL.
Zarges, Berringer & Co.	183,370	81,216	301,760	173,878	740,224	365,683	36,334	53,957	123,324	579,298	1,319,522
Ad. H. Alden, Ltd.	118,554	25,735	156,039	137,855	438,183	162,052	21,008	62,789	41,771	287,620	725,803
Gordon & Co.	174,378	28,630	137,887	57,693	398,588	41,110	5,035	41,530	57,170	144,845	543,433
Suárez Hermanos & Co., Ltd.	.....	.....	.....	.....	.....	78,232	4,607	3,847	23,714	110,400	110,400
M. Ulmann & Co.	.....	.....	.....	.....	.....	2,550	.....	7,920	96,880	107,350	107,350
Pires Teixeira & Co.	11,390	1,020	11,220	16,500	40,130	5,780	340	8,250	.....	14,370	54,500
Nunes Sobrinho & Co.	6,630	2,550	14,520	330	24,030	6,800	510	1,320	.....	8,630	32,660
De Lagotellerie & Co.	10,030	2,380	10,560	.....	22,970	.....	.....	.....	.....	.....	22,970
R. O. Ahlers & Co.	.....	.....	.....	.....	.....	18,005	.....	2,980	406	21,391	21,391
A. de La Rivière & Co.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sundry shippers	5,100	.....	11,220	.....	16,320	170	.....	1,980	.....	2,150	18,470
Itacoatiara, direct	.....	.....	.....	.....	.....	4,350	.....	3,120	5,070	12,540	12,540
	509,452	141,531	643,206	386,256	1,680,445	684,732	67,834	187,693	348,335	1,288,594	2,969,039
Manáos, direct	410,632	126,863	183,714	251,037	972,246	430,260	101,499	129,619	271,186	932,564	1,904,810
Iquitos, direct	8,465	.....	1,305	1,924	11,694	.....	.....	.....	.....	.....	11,694
Total, March, 1912	928,549	268,394	828,225	639,217	2,664,385	1,114,992	169,333	317,312	619,521	2,221,158	4,885,543
Total, February, 1912	1,162,009	304,910	771,647	405,698	2,644,264	1,474,610	126,185	291,077	600,644	2,492,516	5,136,780
Total, January, 1912	752,317	112,959	437,915	64,926	1,368,171	1,382,605	180,547	339,253	451,773	2,354,178	3,722,295

MANAOS EXPORTS OF INDIA-RUBBER FOR MARCH, 1912 (IN KILOGRAMS).

	NEW YORK.					EUROPE.					
EXPORTERS.	Fine.	Medium.	Coarse.	Caucho.	TOTAL.	Fine.	Medium.	Coarse.	Caucho.	TOTAL.	TOTAL.
Zarges, Ohliger & Co.	93,856	19,860	46,364	26,444	186,524	220,329	28,826	39,912	148,417	437,484	624,008
Adelbert H. Alden, Ltd.	105,900	34,234	50,833	116,934	307,901	129,868	48,017	44,498	41,651	264,034	571,935
Gordon & Co.	150,104	46,995	56,366	30,906	284,371	5,548	9,241	6,764	62,084	83,637	368,008
De Lagotellerie & Co.	.....	.....	.....	.....	.....	44,501	11,565	23,997	17,268	97,331	97,331
W. Peters & Co.	.....	.....	.....	35,022	35,022	1,348	939	1,799	2,522	6,608	41,630
Semper & Co.	.....	.....	.....	.....	.....	9,440	640	2,218	.....	12,298	12,298
Sundries	.....	.....	.....	.....	.....	1,499	623	3,471	635	6,228	6,228
	349,860	101,089	153,563	209,306	813,818	412,533	99,851	122,659	272,577	907,620	1,721,438
Iquitos direct	8,465	.....	1,305	1,024	11,694	.....	.....	.....	.....	.....	11,694
Total, March, 1912	358,325	101,089	154,868	211,230	825,512	412,533	99,851	122,659	272,577	907,620	1,733,132
Total, February, 1912	516,991	162,958	243,151	192,861	1,115,961	618,528	87,104	115,259	388,034	1,208,925	2,324,886
Total, January, 1912	693,997	113,367	224,019	132,277	1,163,660	754,036	128,176	145,464	319,297	1,346,973	2,510,633

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ANNUAL MEETING OF THE UNITED STATES RUBBER CO.

The twentieth annual meeting of the stockholders of the United States Rubber Co., will be held at the principal office of the company, in the city of New Brunswick, New Jersey, on Tuesday, May 21, 1912, at 12 o'clock noon, for the election of directors and for the transaction of any business that may come before the meeting, including considering and voting upon the approval and ratification of all purchases, contracts, acts, proceedings, elections and appointments by the Board of Directors or the Executive Committee since the nineteenth annual meeting held May 16, 1911, and of all matters referred to in the twentieth annual report which will be sent to stockholders before the meeting. The transfer books will not be closed, but the New Jersey Corporation Law will not allow to be voted any share of stock which shall have been transferred after May 1, 1912.

Antwerp.

RUBBER STATISTICS FOR MARCH.

DETAILS.	1912.	1911.	1910.	1909.	1908.
Stocks, Feb. 28....*kilos*	521,956	539,207	516,534	331,433	907,104
Arrivals in March.....	250,964	483,396	263,188	544,126	692,398
Congo sorts	172,449	365,463	174,167	410,838	587,972
Other sorts	7,642	60,342	31,452	112,645	93,077
Plantation sorts.....	70,873	57,591	57,569	20,643	11,349
Aggregating	772,920	1,022,603	779,722	875,559	1,599,502
Sales in March.....	413,904	376,989	280,620	279,704	462,610
Stocks, March 31.....	359,016	645,614	499,102	595,855	1,136,892
Arrivals since Jan. 1...	1,038,700	1,269,668	1,039,679	1,128,092	1,517,809
Congo sorts	730,472	940,962	830,830	781,387	1,347,423
Other sorts	30,618	161,177	80,155	277,064	144,718
Plantation sorts.....	277,610	167,529	128,694	69,641	25,668
Sales since January 1..	1,354,422	1,212,266	1,082,089	1,127,972	1,387,811

RUBBER ARRIVALS FROM THE CONGO.

MARCH 21.—By the steamer *Bruxellesville:*

Bunge & Co	(Société Générale Africaine) *kilos*	70,200	
do	(Chemins de fer Grands Lacs)	8,100	
do	(Intertropical)	200	
do	(Cie. Forest and Minière)	2,000	
do	(Comptoir Commercial Congolais)	2,500	
do	(Alberta)	800	
do		1,600	
Société Coloniale Anversoise	(Cie. du Lomami)	5,060	
do	(Cie. du Kasai)	60,700	
L. & W. Van de Velde	(Comfina)	19,000	
do		2,500	
Willaert Freres		6,000	
Edmund Van Steensel		700	179,360

APRIL 10.—By the steamer *Elizabethville:*

Bunge & Co	(Intertropical) *kilos*	11,300	
do	(Comptoir Commercial Congolais)	4,500	
do		2,300	
Société Coloniale Anversoise	(Haut Congo)	16,400	
do	(Kouango franc)	12,900	
L. & W. Van de Velde	(Cie. du Kasai)	72,000	
do	(Comfina)	9,500	
do		6,500	
Willaert Freres		10,000	145,400

Plantation Rubber from the Far East.

EXPORTS OF CEYLON GROWN RUBBER.

[From January 1 to March 25, 1911 and 1912. Compiled by the Ceylon Chamber of Commerce.]

	1911.	1912.
To Great Britain.....*pounds*	695,304	1,548,988
To United States.....	449,576	987,218
To Belgium	72,582	355,810
To Australia	10,167	26,754
To Germany	6,282	21,330
To Canada	9,971	12,121
To Austria	.....	2,717
To Japan	11,953	2,181
To Norway and Sweden.....	.....	39
To Italy	750	.....
To Holland	100	.....
To India	40	.....
Total	1,256,725	2,957,158

[Same period 1910—521,528; same 1909—226,975.]

TOTAL EXPORTS FROM MALAYA.

[From January 1 to dates named. Reported by Barlow & Co., Singapore. These figures include the production of the Federated Malay States, but not of Ceylon.]

To—	Singapore. March 7.	Penang. Feb. 15.	Port Swettenham. Feb. 29.	Total 1912.
Great Britain....*pounds*	1,727,515	1,112,134	2,766,067	5,605,716
Continent	65,982	12,933	353,427	432,342
Japan	24,521	6,457	.....	30,978
Australia	7,040	.....	.....	7,040
Ceylon	.....	13,639	91,066	104,705
United States.....	336,420	.....	.....	336,420
Total	2,161,478	1,145,163	3,210,560	6,517,201
Same period, 1911.....	1,226,855	467,040	2,479,933	4,173,828
Same period, 1910.....	581,467	296,450	1,329,538	2,207,455
Same period, 1909.....	519,576	337,204	.....	856,780

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